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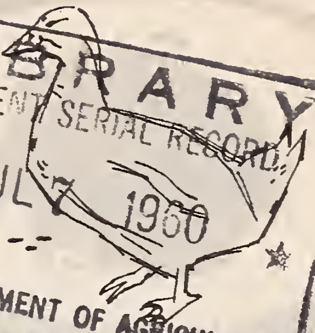

processing and marketing FARM POULTRY

Marketing Bulletin No. 7
U.S. DEPARTMENT OF AGRICULTURE

This bulletin describes the principal considerations, practices, and facilities involved and utilized in the marketing of wholesome poultry. It is intended primarily as an aid to producers engaged in marketing processed poultry of their own production. The information contained in this bulletin should enable such producers to comply with the sanitary standards required of plants which operate under the Poultry Products Inspection Act. The production of wholesome poultry meat starts with good breeding and efficient production practices supplemented by—

- Careful handling of live birds
- Clean and efficient processing facilities and practices
- A practical inspection, grading, and labeling system
- Adequate packaging, refrigeration, and distributing facilities.

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Processing and Marketing Farm Poultry

by Lester Kilpatrick and T. H. Pond, Marketing Specialists, Poultry Division,
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Direct marketing of farm-processed poultry continues to form an important part of the available supply of poultry and poultry products. Processing and marketing at the farm level often makes utilization of seasonal excess labor possible and in some cases has been the basis of making the income from the poultry enterprise adequate for the family needs. Either through lack of knowledge or through carelessness in killing, dressing, and marketing their poultry according to the best methods, poultry producers often fail to receive as great a return from their processing and marketing operations as they might.

Locational considerations play an important part in the prospects of many small plants. The existence of large areas of "noncommercial" poultry production enhances the possibility that small plants can survive in them. Large firms may find bypassing such territory to their advantage.

Some Considerations in Planning the Marketing Program

Every producer should plan a marketing program from which he will receive the greatest possible returns from his poultry. This suggestion applies not only to the producer already in business but also to a person who is thinking of going into the poultry business. Since economic and other conditions differ in various parts of the country, a person who contemplates establishing himself in the poultry business should become familiar with the considerations mentioned in this bulletin. He should also consult the county agent, State department of agriculture, and members of the college of agriculture in the State in which he wishes to locate. He should discuss with these officials not only a marketing program but also the specific location and type of poultry farm he plans. Capital requirements and other management factors should be studied thoroughly before a farm is obtained.

The producer already in business should also consult specialists in his State college of agriculture and State department of agriculture concerning the specific application of the considerations discussed herein, as well as any other factors that apply to his particular locality.

Among the problems confronting the poultry producer who is planning a marketing program are the class of poultry he should raise and whether he should market his poultry live, dressed, or ready-to-cook.[1] To a great extent, his choice depends on the prices of live and processed poultry, the competition among buyers for his poultry, the demands of the market on which he desires to sell, his proximity to market, his volume of production, available labor for processing, and the cost of processing facilities. A careful check should be made concerning State and local ordinances which may be in effect in the area where he plans to market processed poultry. These ordinances may include requirements for plant facilities, license fees, and packaging and labeling.

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[1] Processed poultry includes all dressed and ready-to-cook poultry. Dressed poultry is any poultry slaughtered (for human food) with head, feet, and viscera intact and from which blood and feathers have been removed. Ready-to-cook poultry is any dressed poultry (whole bird or in cutup form) from which the protruding pinfeathers, vestigial feathers (hair or down as the case may be), head, shanks, crop, oil gland, trachea, esophagus, entrails, reproductive organs, and lungs have been removed.

When comparing the relative prices offered for his live and processed poultry, the producer should keep in mind the loss (shrinkage) caused by dressing and eviscerating. Prices for dressed and ready-to-cook (eviscerated) birds should be at least high enough to cover not only the loss in weight incurred in processing but also the costs involved in processing, packaging, and marketing. The first step in computing comparable prices for processed poultry and for live poultry is to determine the approximate amount of shrinkage caused by processing. Processing losses vary considerably depending on the sex, weight, kind, and class of poultry.

Processing, packaging, and marketing costs include charges for depreciation on buildings and equipment, labor, truck or automobile, fuel and electricity, packaging materials, and similar items. Before he decides to process his own poultry, the producer should consider how much return he would get by putting an equivalent amount of money and labor into enlarging the production phase.

Any producer who is thinking of going into the business of marketing processed poultry, or who is now in such a business, should, of course, have sufficient volume to operate efficiently. The volume that is necessary will vary with different situations. In general, however, as the number of birds processed increases, total operating cost per pound will decline and returns for labor will increase. If a producer does not have sufficient volume to process efficiently, he will more likely profit by selling his poultry alive.

The distance from market outlets is likewise a factor to be considered in the marketing of live birds, because shrinkage is involved in hauling live poultry. This shrinkage usually varies from one-half to 5 percent, the amount depending on the distance to market, temperature and humidity, how the birds were handled before and during transporting, and the kind, class, and breed of poultry, as well as other factors.

Before deciding whether he should sell his poultry live or process it himself, the producer should also consider the possibility of joining other producers in selling or processing it. In many parts of the country, producers have set up or joined cooperative associations which sell their poultry for them live, or dress and market it at cost. There may be many advantages to producers in the joint handling of their poultry after it leaves the farm.[2]

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[2] Information relative to the cooperative dressing and marketing poultry may be obtained by writing to the Farmer Cooperative Service, U.S. Department of Agriculture, Washington 25, D.C.

The Poultry Products Inspection Act

The Poultry Products Inspection Act (Public Law 85–172) became law on August 28, 1957. Its purpose, as stated in the act, is to prevent movement in interstate or foreign commerce or in a designated major consuming area of poultry products which are unwholesome, adulterated, or otherwise unfit for human food.

The act requires that after January 1, 1959, any establishment slaughtering poultry for transportation or sale in interstate commerce must be approved and the poultry products processed therein must be inspected for wholesomeness, unless otherwise exempt. Except for the fact that costs are borne by the Federal Government, the inspection program, as carried out under the new law, is operated in a manner similar to the voluntary inspection program which the Department has conducted for some 30 years.

Poultry producers are exempt from many provisions of the act. They need not apply for exemption if they process only poultry raised on their own farms, and sell it directly to household consumers, restaurants, hotels, hospitals, or boardinghouses for serving in their own dining rooms. Such producers are exempt, even though their sales are across State lines, as long as they do not engage in buying or selling of poultry products other than those produced from poultry raised on their own farms; and provided that such poultry is healthy and is slaughtered and processed under such sanitary standards, practices, and procedures as result in the preparation of sound, healthful, and wholesome poultry and poultry products. Shipping containers of such poultry and poultry products may move in interstate commerce if they bear the producer's name and address and the statement "Exempted—P.P.I.A. 85–172."

Recommendations for Farm Processing Plants

A poultryman who processes poultry for retail routes, retail stores, roadside stands, or for direct sale to public eating places needs a processing room.

Some States and local municipalities have laws and regulations which require a license or permit to engage in the business of processing poultry. Such laws and regulations are primarily designed to establish and maintain certain sanitary standards with regard to construction, equipment, and operating practices. For information pertaining to poultry-processing plants, contact State departments of agriculture or health and local health or sanitary authorities.

The regulations promulgated by the U.S. Department of Agriculture under the Poultry Products Inspection Act set forth certain minimum sanitary and operating requirements necessary to produce wholesome poultry. The requirements for premises, buildings, utensils, facilities, and operations are applicable to large processing plants where automatic equipment and conveyor lines are used, as well as to small farm processing operations which are carried on by hand or with very little automatic equipment.

Copies of these regulations[3] are available upon written request.

Location of Processing Plants

Poultry producers who contemplate the construction of a building to house a processing plant should keep in mind the following considerations:

(1) The building should be so arranged that loading and unloading areas are accessible by trucks.

(2) If a salesroom is to be a part of the building, the building should be located near the road. If a producer sells his processed birds at a roadside stand and wants to take advantage of the cold-storage room or freezer located in the plant, the plant should be located near the stand.

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[3] Copies may be obtained from the Poultry Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

(3) The processing should be done on the ground floor so that live birds can be brought in and processed birds removed more efficiently.

(4) If the plant is located near the road, for reasons stated above, space should be available for customers to park.

(5) If sales are to be made at the farm, the plant should be located in as attractive surroundings as possible.

Buildings and Plant Facilities[4]

The building should be of sound construction and kept in good repair. It should be constructed so as to prevent the entrance or the harboring of rodents. The doors, windows, and other outside openings should be protected by properly fitted screens or other suitable devices to prevent the entrance of flies and other insects. When the volume of processed poultry is sufficient to warrant the cost, walk-in refrigerators are efficient.

The floors, walls, ceilings, partitions, posts, doors, and other parts of any compartments should be constructed of materials with a hard, smooth finish that can be readily and thoroughly cleaned. The floors where the operations of killing, ice cooling, ice packing, and eviscerating are conducted should be graded to permit runoff of the water. The pitch should be about one-fourth of an inch per foot to drains. The floor area should be large enough to permit freedom of movement in the plant and between equipment, and to permit all operations to be conducted at the same time with a minimum of unused space.

The drainage and plumbing systems should permit the quick runoff of all water from the building as well as surface water around the plant and on the premises. Floor drains should be equipped with traps. Drainage should pass through a septic tank or be disposed of by other sanitary methods.

The water supply should be ample, clean, and potable. About 30 gallons of water is needed to process a turkey and about 5 gallons for a young chicken. The water should be protected from contamination and pollution. Hot water at a temperature of not less than 180° F. should be available for sanitation purposes.

Ample, well-distributed natural or artificial light, or both, should be provided. For proper lighting, there should be a light intensity of about 30 foot-candles on all working surfaces, except at the inspection station, where a light intensity of about 50 foot-candles is needed. In other places, 5 foot-candles of light intensity (measured 30 inches from the floor) should be provided.

Provision should be made for sufficient ventilation to insure sanitary conditions.

Properly located facilities for cleaning utensils and washing hands should be furnished. Whether in the plant or elsewhere, sanitary lavatory accommodations should be provided.

Equipment and Utensils

Equipment and utensils should be of such material and construction that they can be thoroughly cleaned. Insofar as practicable, they should be made of metal or other water-impervious material. Equipment and utensils include eviscerating and cutting-up tables, chilling vats, barrels for refuse, receptacles used for entrails and other waste, and receptacles used for holding or handling diseased carcasses. Batteries, scalding tanks, and cooling racks, when used, should be made of metal.

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[4] "Remodeling Small Poultry Plants To Meet Inspection Requirements" (AMS–256) may be obtained from the Marketing Information Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

Equipment and utensils used for processing poultry should not be used for other purposes.

Floor Plans

After a producer has decided on a building and equipment for processing poultry, a floor plan should be made. This plan should show the location of all equipment in relation to the building facilities, such as doors and windows. The importance of efficient arrangement of equipment increases as the number of birds processed is increased.

Figure 1 shows a floor plan for a small farm processing plant in which 3 workers can dress about 120 birds per hour or can eviscerate about 60 dressed birds per hour.

Figure 2 shows a floor plan for a farm processing plant with refrigerated storage and salesroom. In this plant, 5 workers could dress about 200 birds per hour or eviscerate approximately 100 dressed birds per hour. Since this plant would be equipped for freezing, considerable quantities of poultry could be processed and held over for a period of time.

Manufacturers of poultry-processing equipment have developed complete floor plans for large plants which have automatic equipment and conveyor lines. Some of these plans are suitable for farm processing plants in which large volumes of poultry are processed.

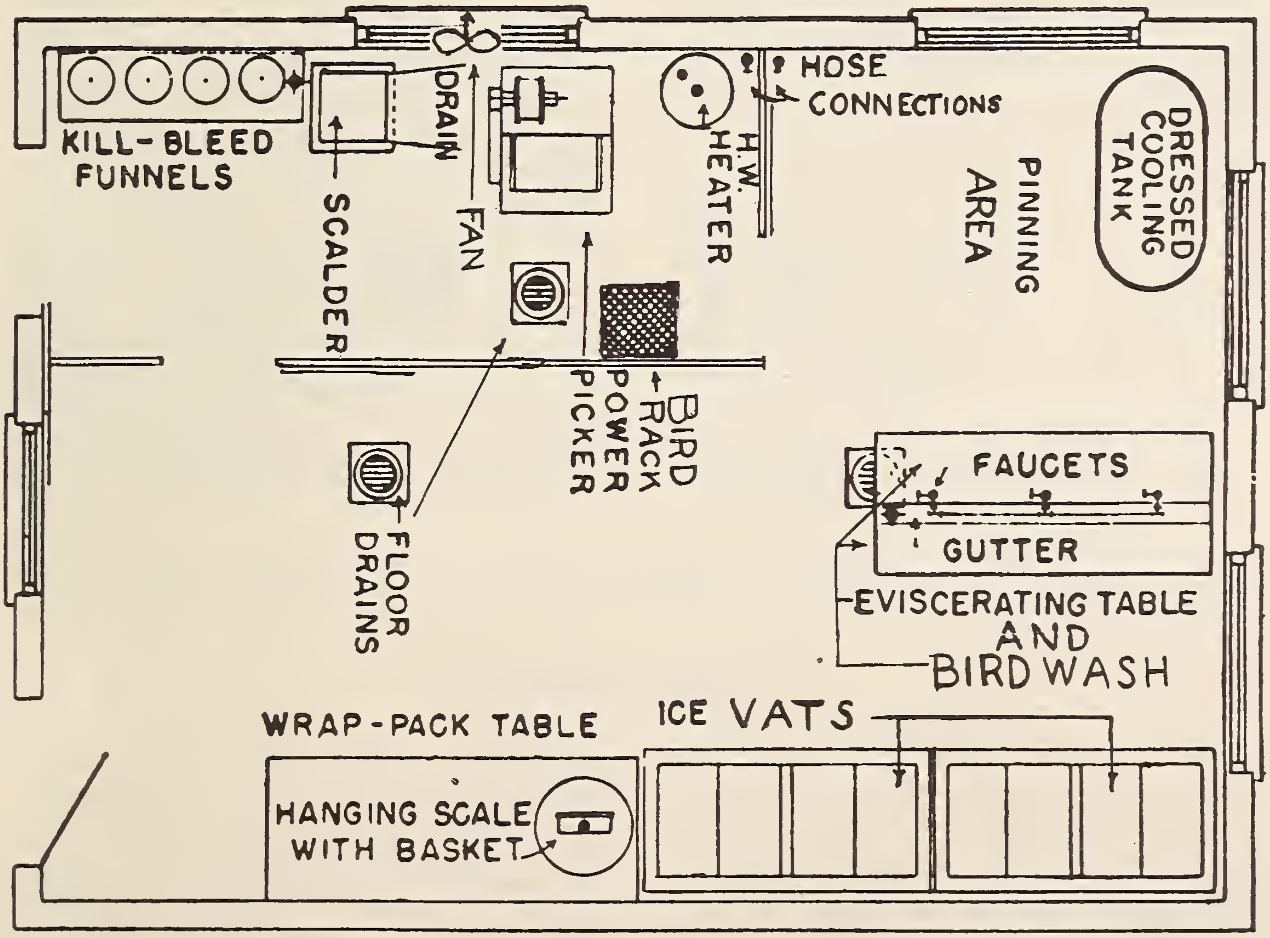

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Figure 1.—Suggested floor plan for a small farm processing plant employing two to five workers.

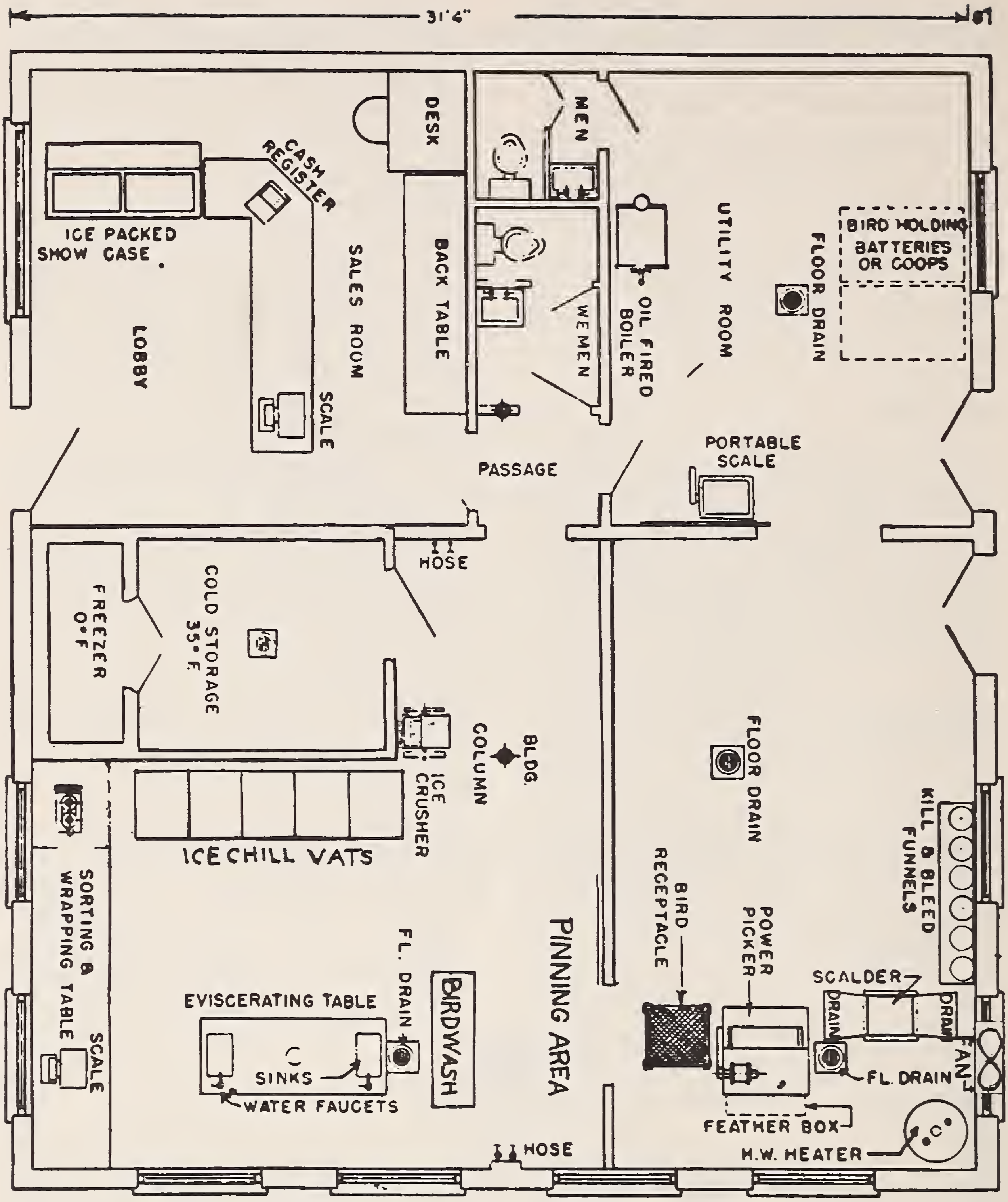

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FIGURE 2.—Suggested floor plan for a farm processing plant with cold storage and salesrooms. From five to nine workers can be efficiently employed.

Processing Poultry

Top quality dressed or ready-to-cook birds can be obtained only from live birds which are in prime condition at the time of slaughter. A successful farm processing operation, therefore, requires careful attention to the growing phase. Strains of poultry as well as breeds vary in the length of time required to reach ideal condition for slaughter. Feathering and fat cover should be carefully noted for each type and strain. The birds should be practically free of pinfeathers which have not developed to the extent of having a definite brush. The degree of fat cover can be judged by examining the web of the wing, the area between the heavy feather tracts on the breast, and by lightly pinching the skin over the abdomen.

Producers who specialize in fresh, iced poultry for continuous sale must schedule hatching dates so that they have a regular supply of birds in the sizes needed or else have an outside source of supply of live birds.

Producers who specialize in frozen products must time their growing operations so that birds are in prime condition at the time of processing or have access to a supply from outside sources.

Birds to be processed should not be fed for several hours prior to killing, but should be given plenty of water. This is necessary in order that the crop and intestines may be sufficiently empty to prevent contamination during processing.

Killing and Dressing

Every effort should be made during the processing operations to maintain high quality in the carcass. Maintenance of quality will depend on the efficiency with which the following procedures are performed and to some extent in what order they are undertaken. (Whether a farm plant is large enough to use mechanical equipment with a line operation, or whether the processing operations are done by hand, the order of procedure is fundamentally the same.)

Killing.—In farm processing plants, poultry is usually killed by cutting the bird's throat either from the outside (fig. 3) or from the inside.

Cutting from the outside is the most popular method. Whether the bird's throat is cut from the outside or inside, both the large vein and the cross vein, illustrated in figure 4, should be cut. Puncturing the brain is no longer practiced in connection with the killing of chickens.

Killing of poultry by cutting the bird's throat from the outside while the bird is in the blood funnel (see fig. 5) or while suspended from a shackle is a satisfactory method of farm or small-plant slaughter. Sometimes birds are thrown into barrels for bleeding. This, however, is not a desirable practice because the feathers become soiled with blood and fecal matter, and contaminate the scaldwater; also, the muscular spasms may cause carcass defects.

Bleeding.—Poultry should be thoroughly bled after killing. Blood showing in veins on the body and in feather follicles indicates poor bleeding. In smaller farm-processing plants, the birds, in funnels, are usually allowed to bleed into pails or specially designed drain troughs. In line operations, the birds bleed into troughs or blood removal tunnels as they pass along the line (fig. 3). Birds should not be placed in the scald water until breathing has stopped. This is necessary to prevent contamination of the air sacs with inhaled scald water.

Picking.—The removal of all feathers, pinfeathers, and hair is important if the finished product is to be acceptable. Most producers have found that scalding is a practical procedure to use in picking.

Wet picking means the picking of feathers after the birds have been immersed in, or sprayed with, hot water. Three general methods of scalding poultry preliminary to picking are hard-scald, subscald, and semiscald.

The hard-scald method is usually defined as submerging poultry for 30 to 60 seconds in water heated to 160° to 180° F. This method is more commonly used for ducks and geese because of the greater difficulty in removing feathers from

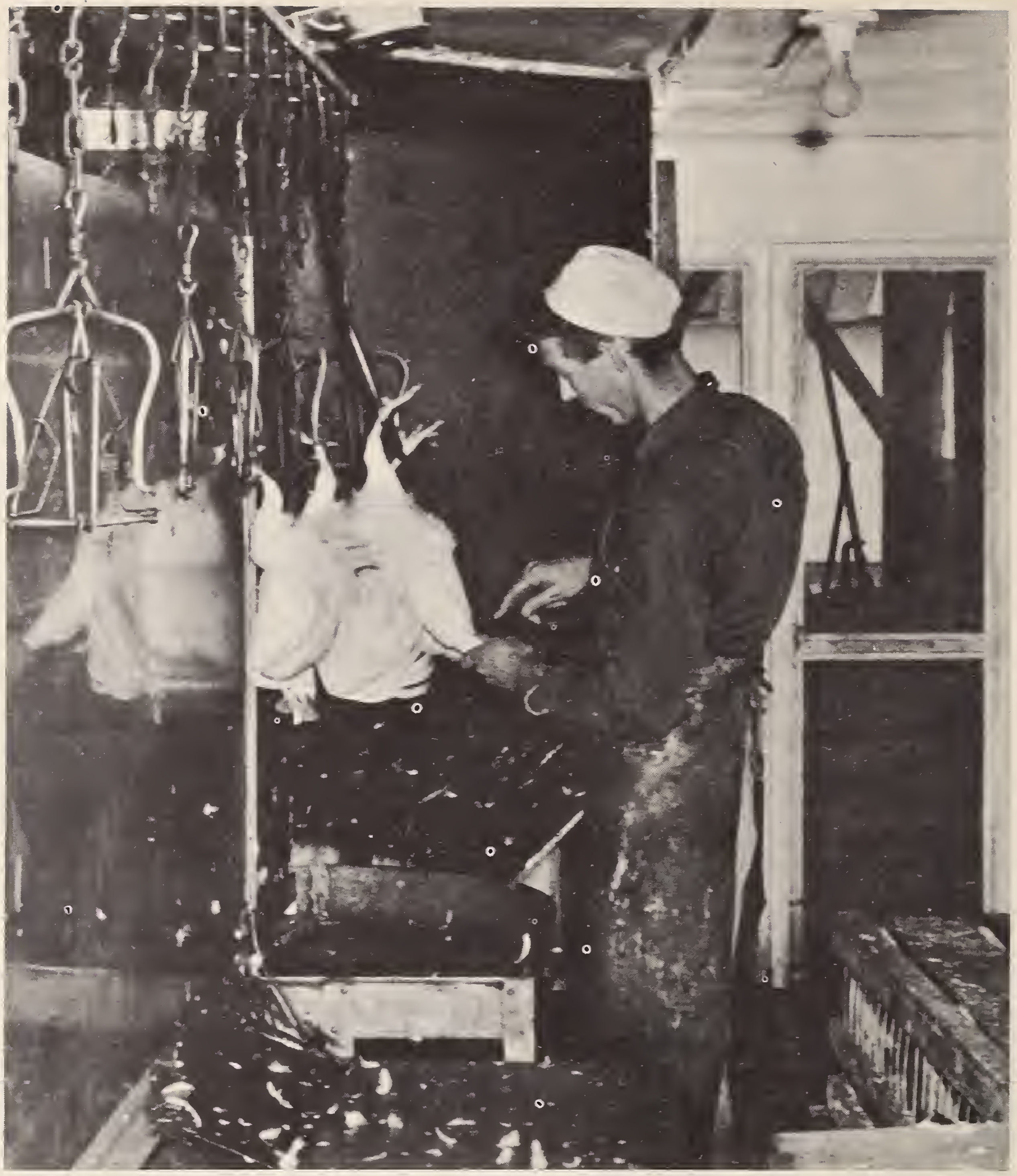

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FIGURE 3.—Cutting the bird's throat from the outside. Chickens are hanging from shackles in a farm processing plant.

these birds. When used with other classes of poultry, the method results in undesirable discoloration of the skin soon after processing. However, hard-scald is suitable for poultry that is to be canned immediately.

The subscald method is usually defined as submerging poultry for 30 to 75 seconds in water of 138° to 140° F. Lower temperatures are used with longer periods of submergence, the combinations of time and temperature varying with kind, age, and class of poultry. Subscald temperature, in contrast with hard-scald temperature, breaks down the structure of only the outer layer of skin and still accomplishes removal of all the feathers more easily than the semiscald. The removal of the thin outer layer of skin permits more rapid loss of moisture. The resulting skin sur-

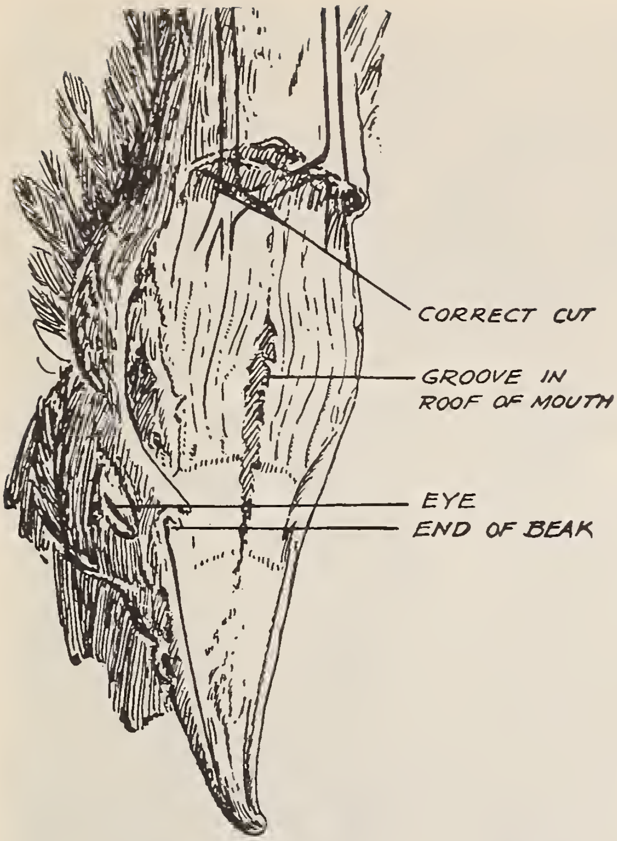

FIGURE 4.—Cutting the large vein and the cross vein at the same time is necessary to insure good bleeding.

face has a shiny appearance which becomes sticky as it starts to dry. In order to prevent undesirable discoloration, immediate wet chilling, moist holding conditions, or tight moisture-vapor-proof wrappings are necessary.

The semiscald method is defined as submerging poultry for 30 to 75 seconds into water of 123° to 130° F. Here, as in the subscald method, the proper combination of both temperature and length of time is important. The use of a low scalding temperature generally leaves the epidermal layer intact, which aids in retarding dehydration and partially reduces the wrapping requirements to maintain satisfactory appearance and shelf life.

Various types of scalding equipment are on the market. The best scalders are equipped with a thermostat to control the temperature of the water. An overflow is necessary to maintain sanitary scald water. The water inflow should be above the tank so that there is no direct connection between the water in the tank and the potable water line. Scalders for on-the-line operations are available in sizes suitable for medium and large plants. Figure 6 illustrates a batch-type scalder suitable for use with hand picking or mechanical pickers.

Handpicking is practical only when a small number of birds are being processed. The birds are hung on stationary shackles or ropes for picking immediately after immersion in the scalding tank. The large tail and wing feathers are pulled first. A fairly good picker can pick about 20 chickens or 10 ducks an hour.

Mechanical pickers are practical if a poultryman is picking 50 or more birds per week. The simplest mechanical picker consists of a revolving drum with rubber fingers against which the bird is held to remove the feathers. One man can pick 10 chickens in about 10 minutes with this equipment. Batch-type mechanical pickers are available in which the rubber fingers are on the inside of the drum and the picking is done automatically (fig. 7). They come in sizes which are practical for the smallest or largest plants. Mechanical pickers of any type require regular and thorough cleaning.

Dry picking is little used today. When this method was used, the birds were killed by cutting the veins inside the throat. The brain was then punctured and the birds picked immediately without the use of water.

Pinning.—Each bird should be examined carefully for pinfeathers. Pinfeathers are best removed with a pinning knife. The operator grips the pinfeather between the edge of the blade (always kept dull) and his thumb and pulls outward. Scraping the pinny area or skin with the pinning knife is to be avoided because of resulting skin

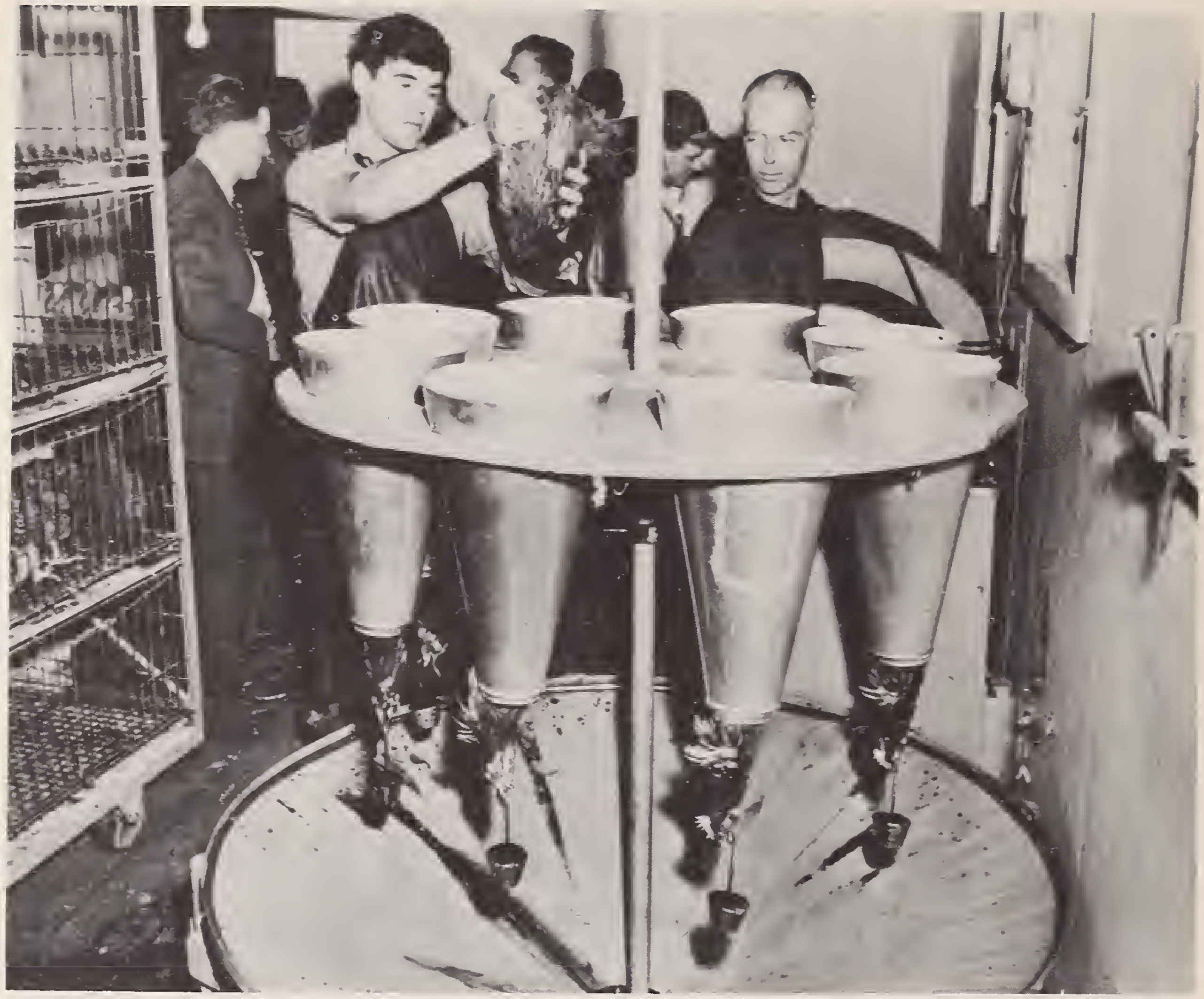

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FIGURE 5.—One type of funnel arrangement for holding birds for killing. A weight attached to the bird's lower mandible insures the draining of blood into the drain pan under the birds.

abrasions. Figure 8 shows a pinning operation in a farm processing plant.

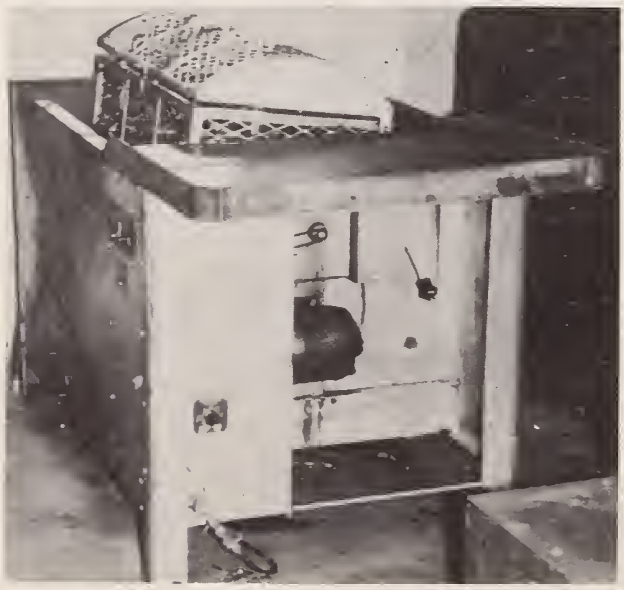

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FIGURE 6.—One of scald tanks.

Singeing.—After the pinning operation, the birds should be singed to remove the hairs that remain. On farms, bottled gas, a blowtorch, an alcohol burner, or a kerosene burner is used for singeing. Birds are rotated as they are passed rapidly over the flame.

Cropping and venting.—If the poultry is to be processed in ready-to-cook form soon after slaughter, removal of the feed or crop prior to evisceration is unnecessary since this is one of the evisceration requirements. If the poultry is to be marketed in dressed form, the crop should be removed in all instances when the feed in it causes a slight bulge in the crop area. The crop is removed through a small slit in the back of the neck. Removing the crop entirely instead of

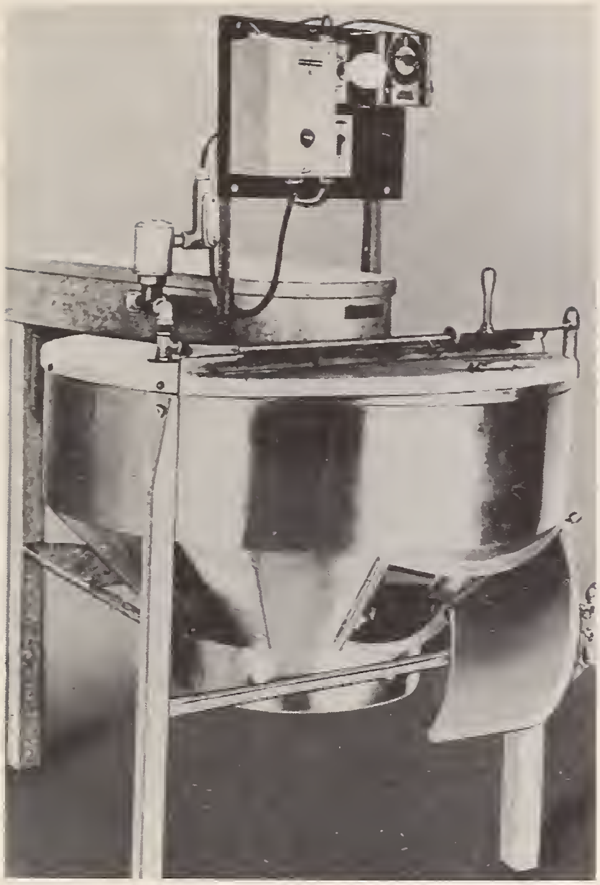

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FIGURE 7.—A batch type mechanical picker.

slitting and washing it out is the most desirable practice since even careful washing may fail to remove particles of feed that become lodged in the surrounding skin and muscle tissue.

When crops with noticeable quantities of feed are left in the dressed carcass, fermentation of the feed will taint the surrounding meat and cause the skin of the crop area to turn dark and sour. Offensive odors will be noticeable.

Venting is performed on the defeathered carcass by pressing on the abdomen just below the vent for the purpose of removing any fecal matter which may still be in the lower intestine. The carcass must be washed immediately after venting and before the viscera is drawn.

Washing.—After dressing, the carcass should be passed through a spray or sprays which provide an abundant supply of fresh clean

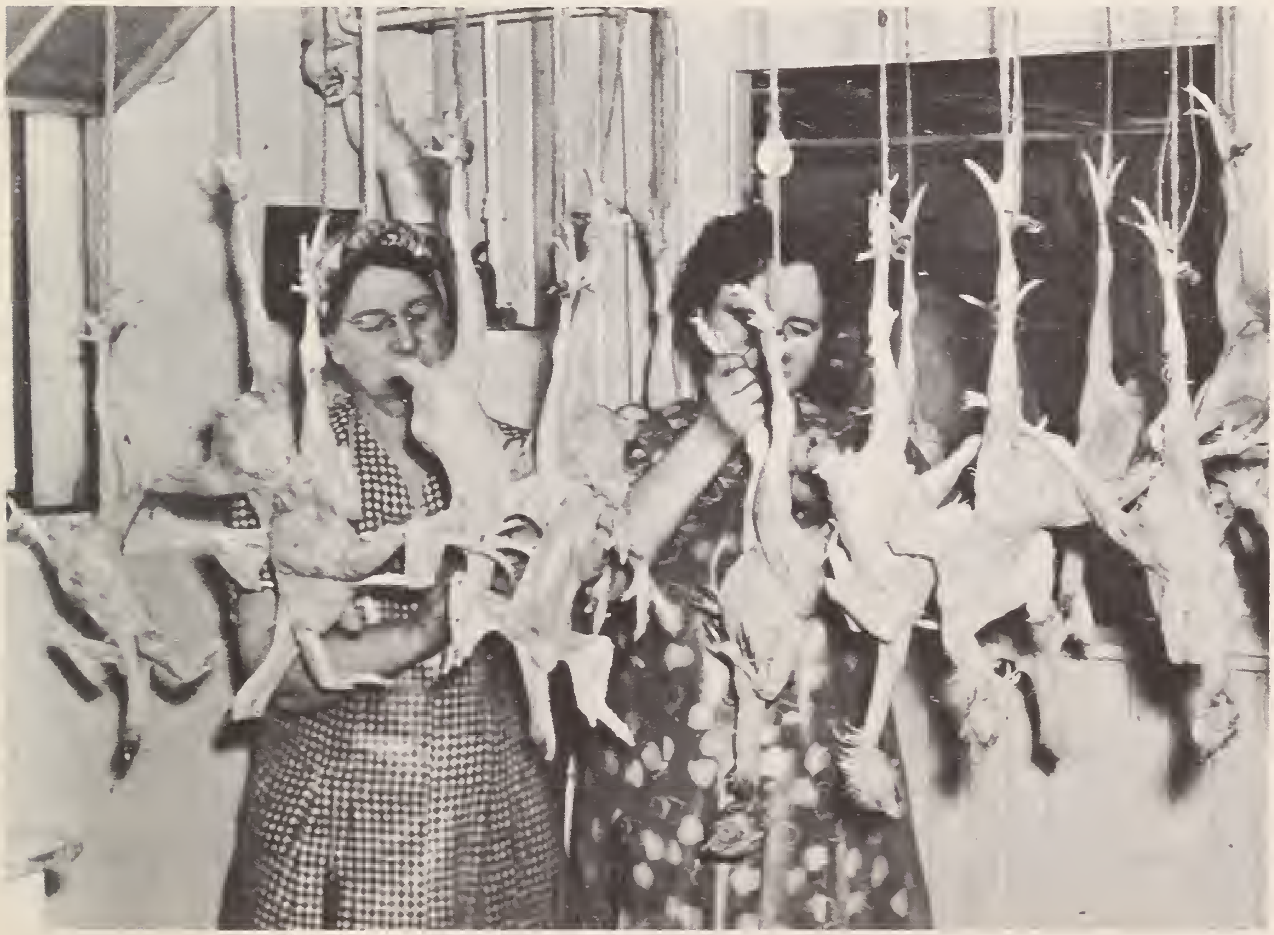

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FIGURE 8.—Pinning the birds.

water, either under pressure or for scrubbing action.

Eviscerating

Poultry to be marketed as ready-to-cook should be eviscerated while warm, and then cooled. Poultry to be marketed as cut up or parts should be chilled after evisceration and before cutting. Research has shown that thorough chilling prior to cutting results in more tenderness of the flesh. Whether the birds are sold fresh or frozen, eviscerating them as quickly as possible after slaughter is desirable. Stationary shackles for small-farm operations provide the most sanitary method. If a table is used, it should be of metal construction (fig. 9).

In some large farm processing plants, the eviscerating is done on an overhead conveyor line where each worker does a specific job on each bird. This practice aids in producing a clean product because the bird is suspended from a shackle during the entire operation.

There are several methods of eviscerating. The method used usually depends on the kind and class of poultry to be eviscerated and on the form (whole, halves, or cut up) in which the poultry is to be marketed. Regardless of the method used in eviscerating the bird, the carcass should be thoroughly washed inside and out immediately following evisceration. The giblets likewise should be thoroughly washed.

Whole birds.—In one method of eviscerating, when the bird is to be left whole, the steps are as follows:

(1) The head is cut off with a knife, cleaver, or shears (fig. 10, *a*).

(2) The shanks are removed. The cut should be made through the large joint. This prevents the meat from pulling away from the bone while cooking (fig. 11, *a*). If the tendons are to be removed

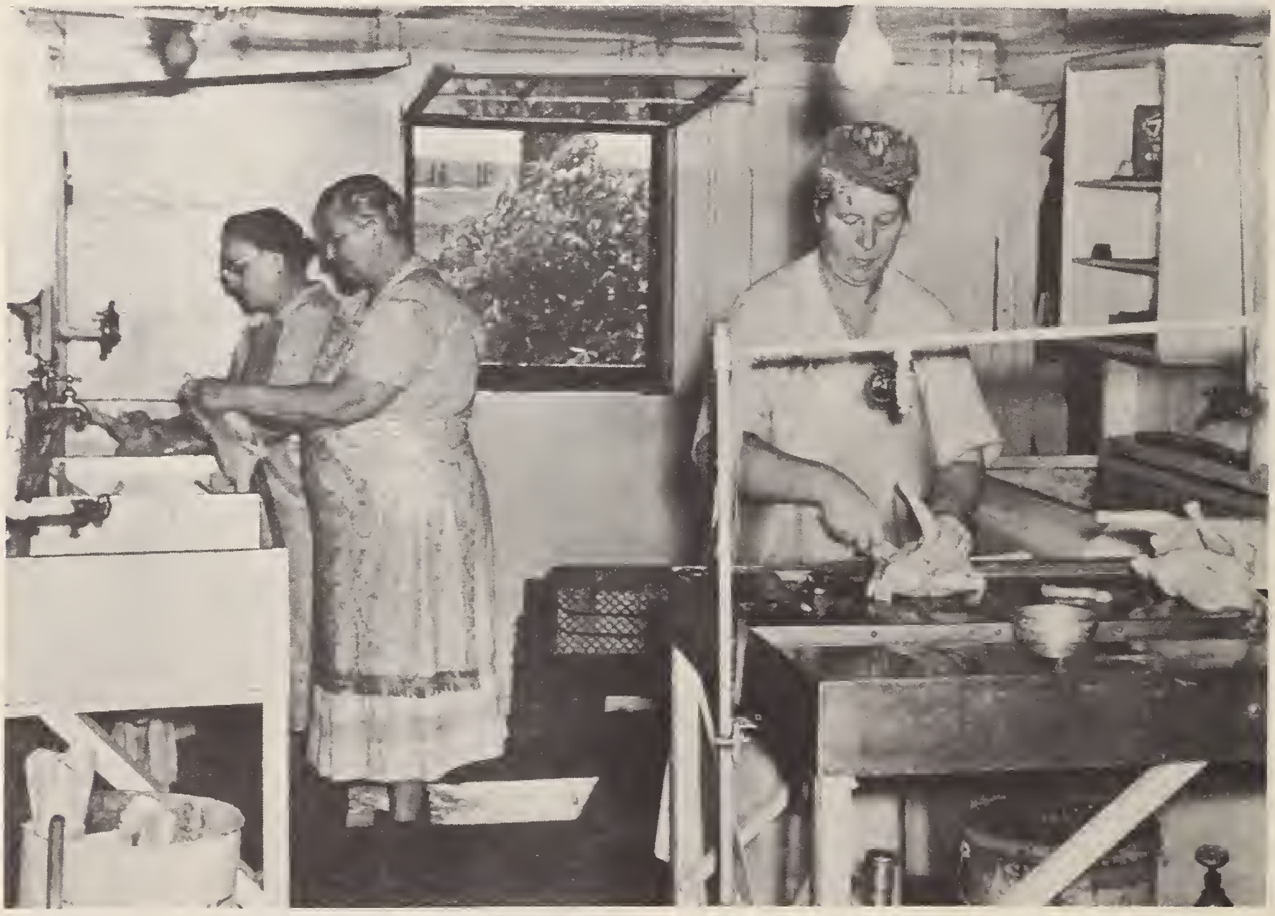

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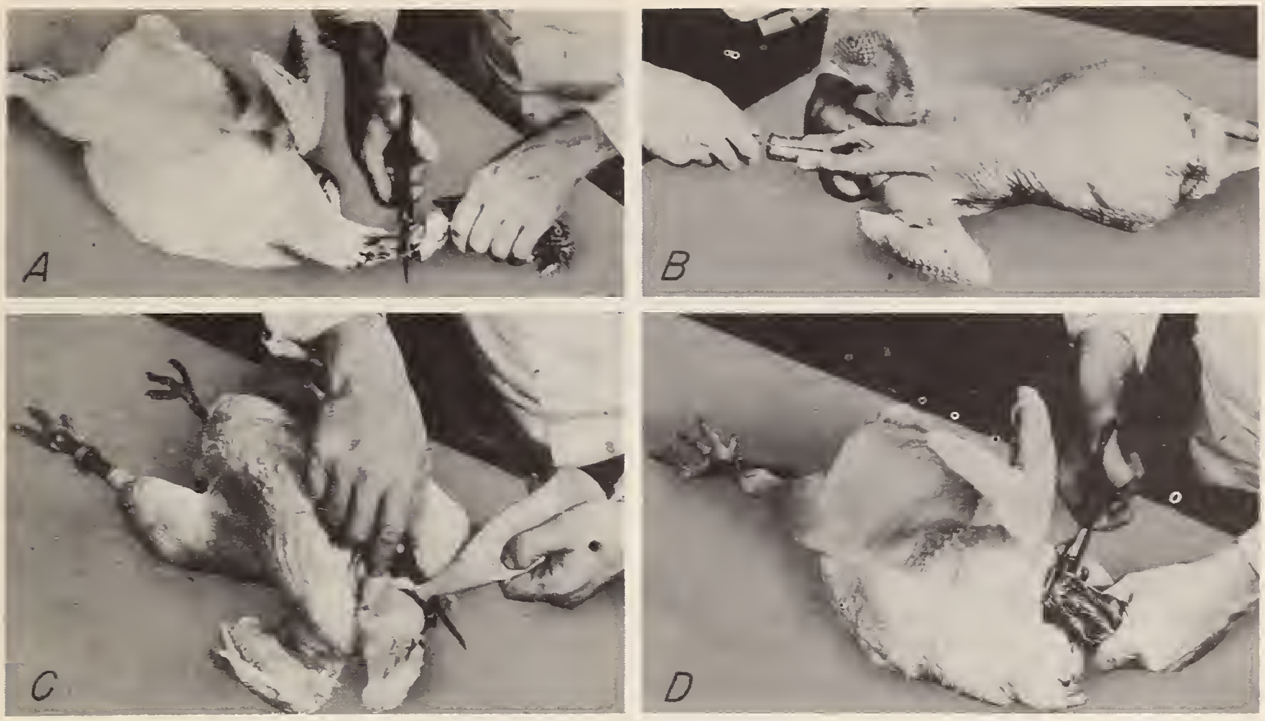
FIGURE 9.—Eviscerating chickens in a small farm processing plant.



DN–1627, DN–1628, DN–1629, DN–1630

FIGURE 10.—*a*, Removing the head; *b*, slitting the skin down the back of the neck; *c*, removing crop and windpipe; *d*, removing neck.

(more often done with turkeys), they should be pulled prior to cutting off the shanks.

(3) If the bird is to be trussed, the skin on the back of the neck is cut from the point where the head was severed to a point in line with the base of the neck (fig. 10, *b*), and the skin is then pulled down to the shoulder.

(4) The gullet, crop, and windpipe are removed by pulling them away from the neck skin. The gullet, crop, and windpipe are then cut off at the point nearest to entrance to the body cavity (fig. 10, *c*).

(5) The neck is cut from the body at the beginning of the back (fig. 10, *d*.).

(6) The oil sac, located on the back of the bird at the base of the tail, is removed by cutting under the sac to the backbone and up toward the tail (fig. 11, *b*).

(7) The entrails are removed from the bird. Two types of cuts, vertical and transverse (horizontal), are used to make an opening into the body cavity. For the vertical cut, an incision is made below the end of the breastbone (keel) down to and around the vent (fig.

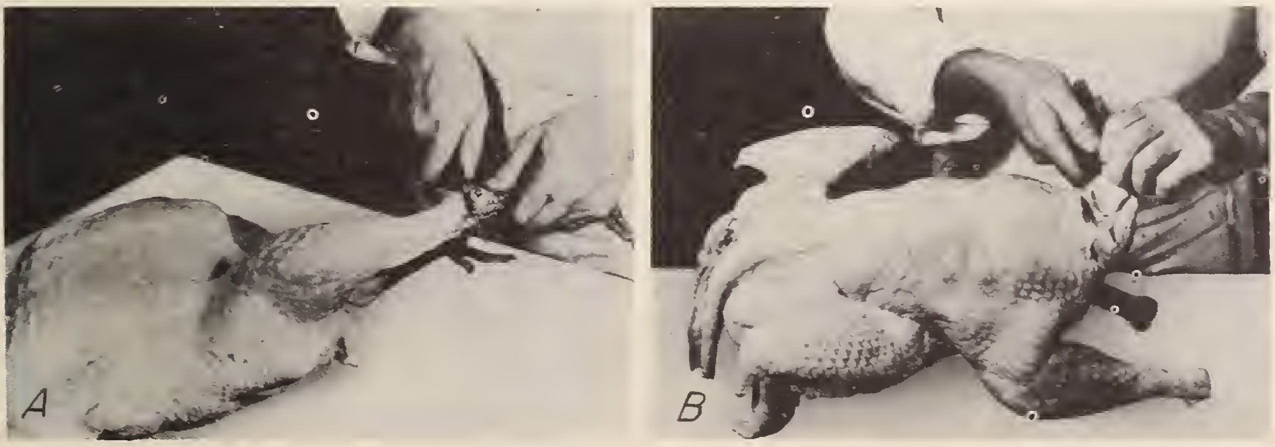


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FIGURE 11.—*a*, Cutting off the shank; *b*, cutting out the oil sac.

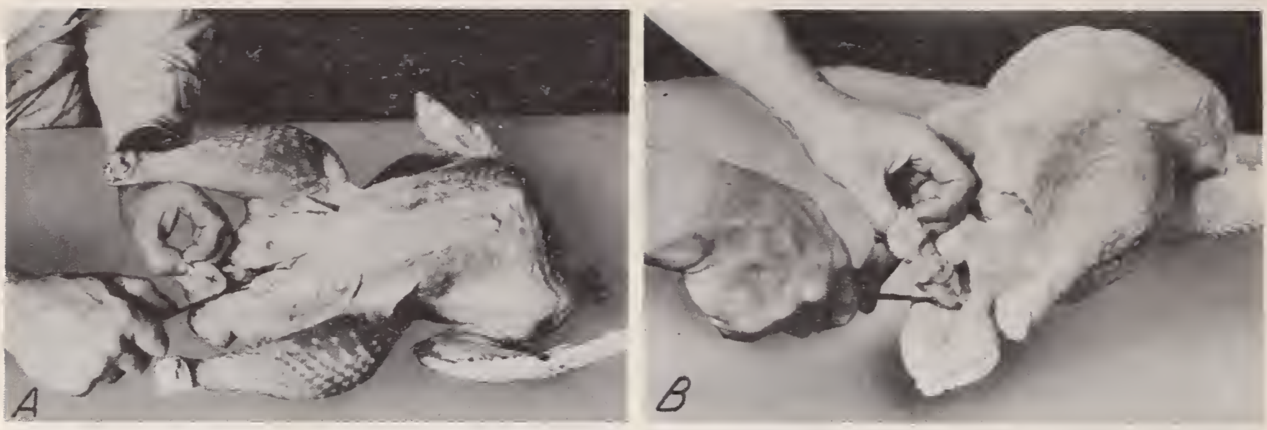

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FIGURE 12.—*a*, Vertical cut to remove viscera; *b*, transverse cut to remove viscera.

12, *a*). The gizzard is pulled through the opening together with the liver, heart, and intestinal tract. Care should be exercised to avoid rupturing or cutting the intestines, thus avoiding fecal contamination. The lungs are then removed. The carcass is washed inside and out.

The transverse cut is made by cutting across the body between the end of the keel and the vent. Then a cut is made around the vent (fig. 12, *b*). The entrails (viscera) are removed through the transverse cut. This type of cut is used when birds are to be trussed.

(8) The gizzard, liver, and heart are removed from the viscera. The gizzard is split, lengthwise, through the thick muscle. The lining and contents are carefully peeled out, avoiding feed contamination of gizzard fat.

The gall bladder may be removed without breaking by grasping it, between the thumb and forefinger of one hand, close to the liver, holding the liver with the other hand, and pulling the gall bladder away.

(9) The heart is trimmed and washed free of blood.

(10) The giblets (gizzard, liver, and heart—the neck may be included) are washed, wrapped in parchment paper, and placed into the body cavity.

(11) If the bird is to be trussed, the first step is to draw the neck skin as far over the back as possible and lock the wings to hold the skin in place (fig. 13). If a transverse cut has been used to make an opening into the body cavity, the legs of the bird may be forced through the opening (fig. 14, *a*). If a vertical cut has been used, the legs must be tied down to the tail end with white cotton cord, or some similar material. The bird is now ready for chilling, freezing, wrapping, sale, and cooking.

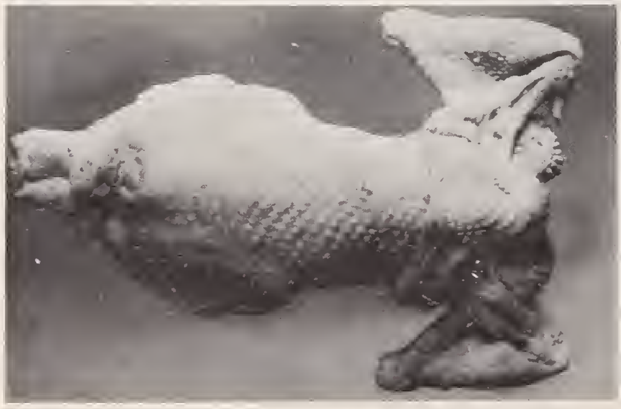

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FIGURE 13.—Neck skin held in place by wings.

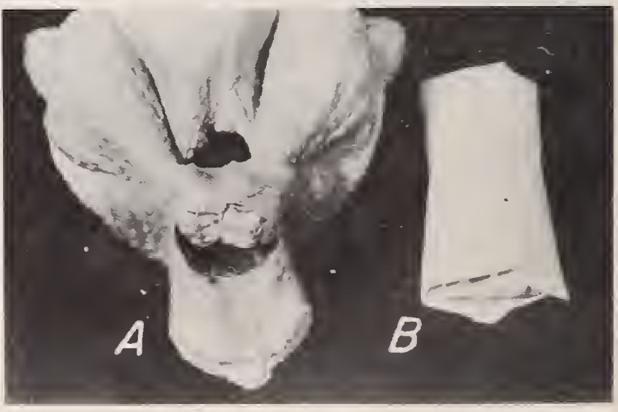

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FIGURE 14.—*a*, Legs of trussed bird held in place by skin; *b*, wrapped giblets.

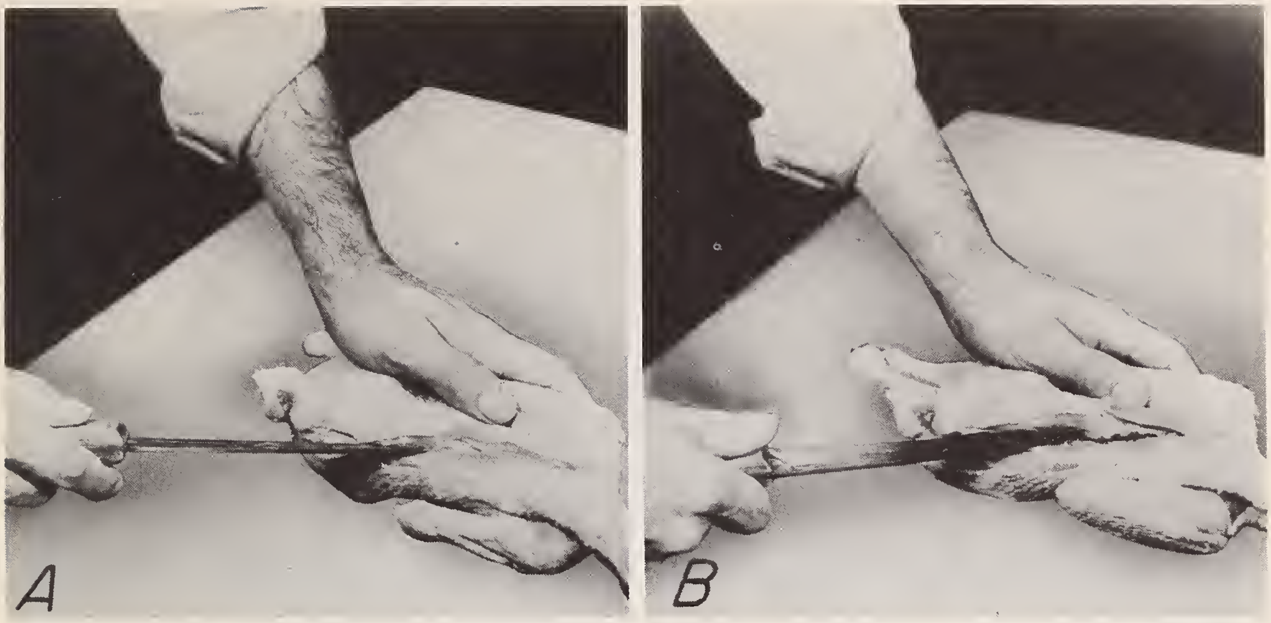


FIGURE 15.—Cutting open the body cavity of a broiler or fryer; *a*, The incision; *b*, cutting through the back.

Broilers or fryers.—Broilers or fryers, if they are to be split or halved, are frequently eviscerated in a different manner from that described for whole birds.

(1) The head, shanks, and oil sac are removed as illustrated in figures 10*a* and 11. The neck is left attached to the body.

The bird may then be split down the back by making a diagonal cut from the neck and wing on the back to the lower side of the tail (fig. 15).

(2) Another procedure is to cut down one side of the backbone, encircle the vent, and continue the cut up the other side of the backbone. The backbone and neck may then be stripped out. For either procedure the carcass is spread apart and the internal organs removed (fig. 16). The carcass is washed. The giblets are then trimmed, washed, and wrapped separately. The broilers may be halved or quartered. If they are cut into pieces, the carcasses should be chilled prior to cutting.

Chilling

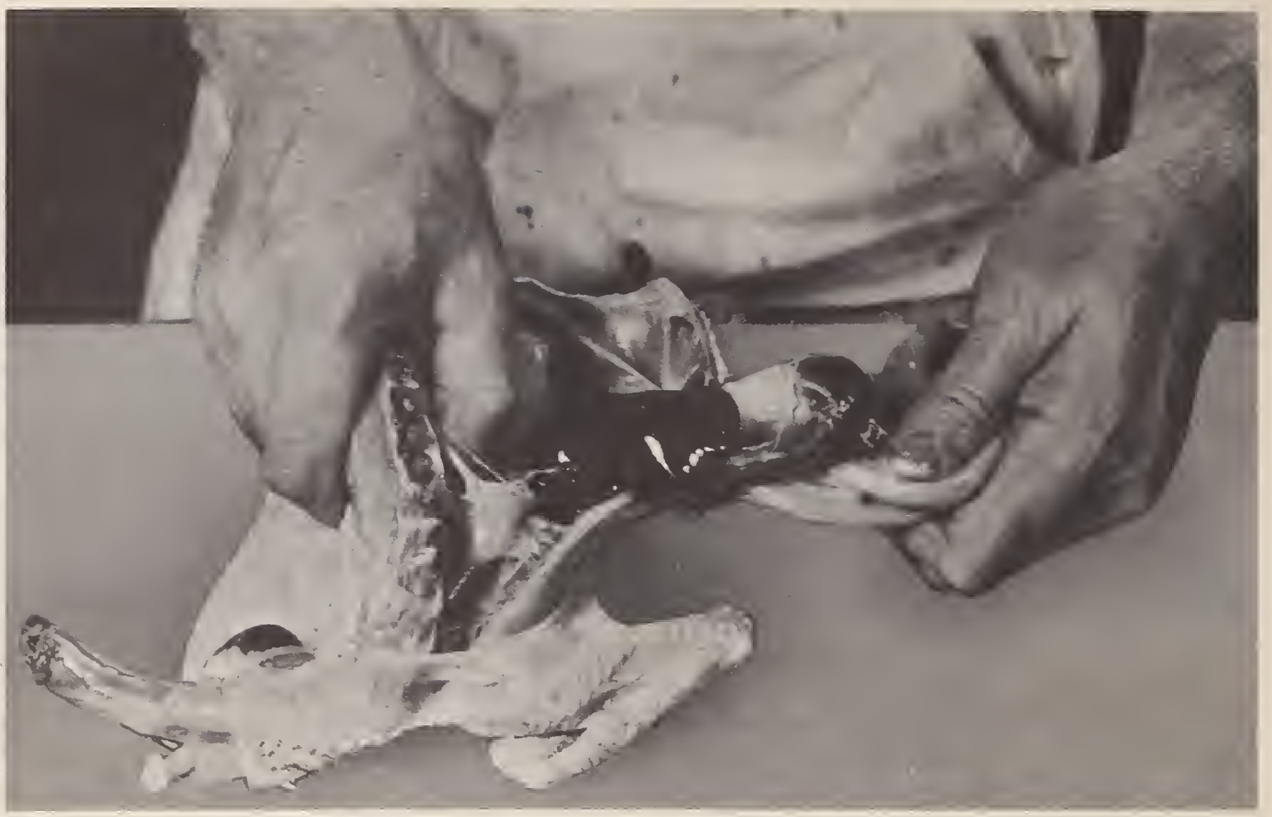
Two general methods of chilling are used on farms, *ice and water*, *or ice-slush chilling*, and *air chilling*. Ice chilling is most often used in farm processing plants. Large metal or hard-surfaced tanks (fig. 17) are used for this type of chilling. Chilling vats or other types of containers should be *thoroughly* cleaned with hot water and detergent at least once daily.

Only crushed ice produced from potable water should be used in vats or tanks. If ice is of the block type, it should be washed by spraying with clean water before crushing. All ice-handling equipment should be washed once a day.

Enough clean, crushed ice should be used with clean water in chilling tank or vat to maintain a temperature under 40° F. at all times during chilling.

Chill tank water must be clean. Filthy water will contaminate the birds. Diseased or otherwise unfit birds should be destroyed and should not be placed in the chilling tanks.

When ice is not available, and during winter months, cold potable well water alone is sometimes used to chill poultry. In this case, the water must be replaced continuously in order to reduce temperature to 40° F. as rapidly as possible,



DN–1638

FIGURE 16.—Removing the viscera from the opening in the back of a broiler.

and this requires that the temperature of the water be below 40° F.

In *air chilling*, the birds should be hung on racks immediately after evisceration and placed in a refrigerated room, or they should be placed on shelves in the cooler (fig. 18). Refrigerated rooms, for this purpose, should be odor free and should have moderate air movement. They should be maintained at a temperature below 40° F. at all times, preferably around 35° to 36° F.

Time requirements for chilling poultry.—When poultry is *ice-water chilled*, carcasses should be chilled to 40° F. or below in less than 4 hours if they weigh less than 4 pounds, in less than 6 hours if they weigh 4 to 8 pounds, and in less than 8 hours if they weigh more than 8 pounds.

When poultry is *air-chilled*, the internal temperature of the carcass should be reduced to 40° F. or lower within 24 hours.

Chilling poultry to 40° F. or lower immediately after processing, and holding it as close to that temperature as possible until it is to be prepared for cooking, is an important requirement for maintaining top quality and preventing off-condition.

Cutting Up

Many homemakers prefer to buy poultry ready for the pan, just as they buy beef, pork, and lamb. Also, they often prefer to buy the pieces particularly liked by the family instead of having to buy an entire chicken. Food chains and other retail stores that sell cutup chickens report that the cutting up of broilers and fryers has increased the sales of these classes of poultry.

A completely cutup bird consists of breast (may be cut into two or more pieces), two wings, two legs (thighs and drumsticks may be separated), back (whole or cut into two pieces), and neck, plus gizzard, heart, and liver. Slightly bruised birds and those with minor imperfections can be sold most advan-

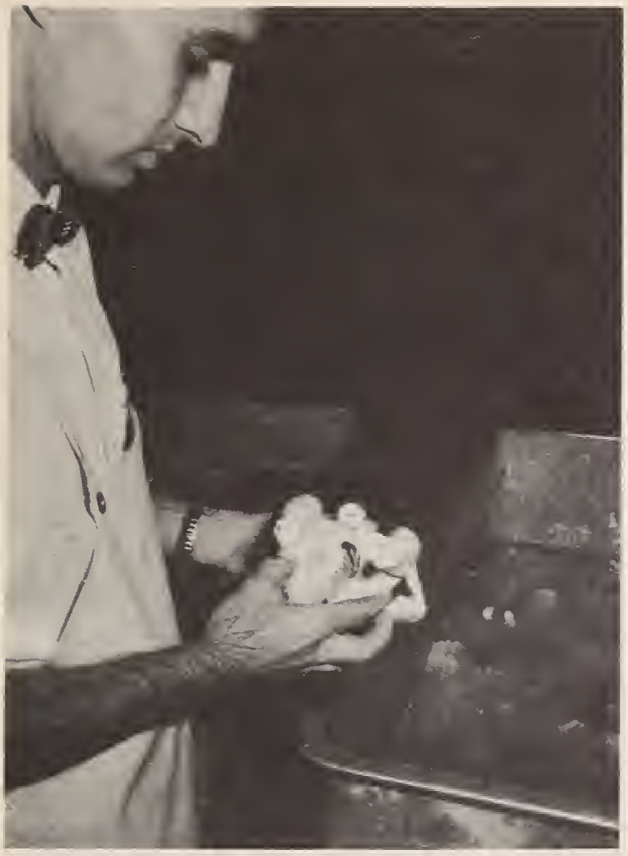


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FIGURE 17.—Chill tank. Checking temperature of bird.

tageously as cutup poultry after the bruised parts are cut out. Research results indicate that for maximum tenderness birds should be chilled several hours before cutting up or freezing.

Chickens.—Figure 19 illustrates the steps used in one method that is sometimes called "fricassee cutting" for older chickens. If birds are to be sold fresh, they should be kept thoroughly chilled before selling.

If the bird is to be sold by pieces (as legs only or wings only, etc.), the usual practice is to remove the wing at the breast. In fryers, the thigh is often removed so as to include as much as possible of the pelvic meat (the so-called "oyster") from the back. The breast is separated from the backbone by cutting downward between the collarbone and backbone toward the tail, leaving the pelvic bone and neck skin intact. The same operation is repeated on the other side of the backbone. Back and neck strips may be left intact or cut into two or more pieces.

Turkeys.—Since the development of the big meat-type birds, turkey producers have been raising heavier birds, particularly the "broad breasted" varieties. At the same time, American families have become smaller and many household ovens are too small to roast a large turkey. This trend has encouraged the rather widespread raising of the small-type turkey, particularly the Beltsville White.

However, smaller families particularly would buy turkey meat from large birds more often if it were available in pieces throughout the year (figs. 20, 21, and 22). Half-turkey and quarter-turkey "roasts" have a definite appeal to homemakers. Other parts, occasionally available, are disjointed pieces of "cut ups," crosscut steaks, and boneless steaks. Different methods of cutting up and deboning have

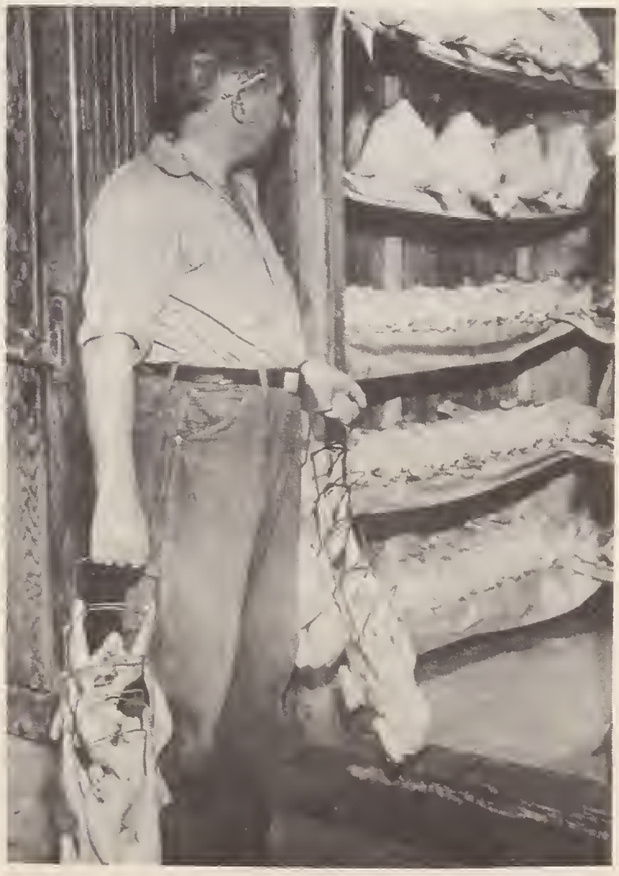

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FIGURE 18.—A walk-in cooler in a farm processing plant. Birds are placed on shelves or hung on racks.

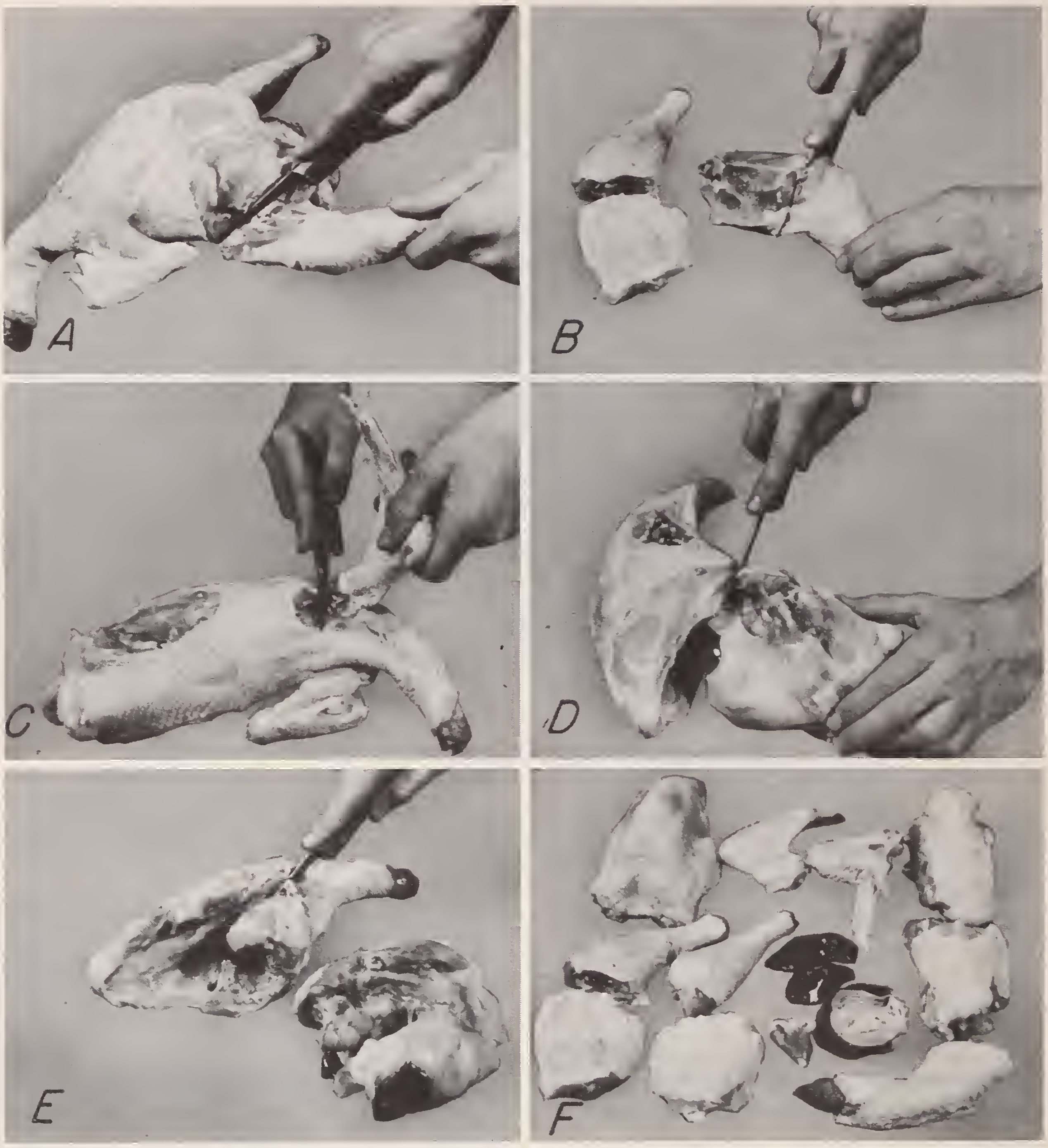

FIGURE 19.—Cutting up a chicken: *a*, Removing legs at hip joint; *b*, cutting legs in two pieces at knee joint; *c*, removing wings; *d*, cutting body in half; *e*, cutting breast away from back; *f*, chicken completely cut up into pieces.

been developed largely as a means to assist in the sale of large turkeys. One of the more important of these is the turkey roll or "log."

To prepare quartered turkey, cut or saw the half bird into two quarters. This procedure results in excellent roasting-size cuts, and offers the consumer either dark or light meat in smaller quantities than those available from a half turkey or a whole turkey (figs. 21 and 22).

Disjointed turkey is prepared about the same as disjointed fryer chickens (fig. 19), except that the breast may be halved with or without the wing attached. The leg may be left whole with or without the "oyster" attached, or the thigh and drumstick may be separated (fig. 22).

One of the latest developments in merchandising turkeys is crosscut steaks (fig. 23). Information on crosscut turkey steaks and cutting

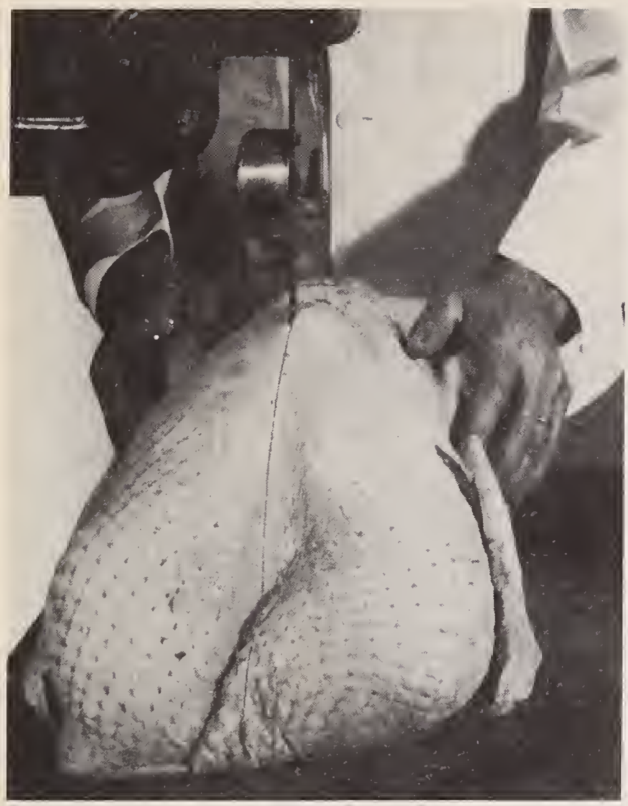

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Figure 20.—A large frozen turkey being cut in half with a band saw. A meat saw may be used for this purpose. Birds can be cut before being frozen but this is not easy. Sometimes, a part or a complete set of giblets is included with each roast.

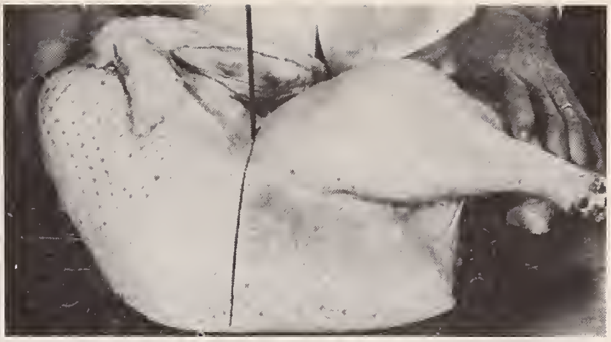

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Figure 21.—Half a bird being cut into two quarters. The front quarter is largely white meat. The rear quarter contains mostly dark meat.

up of turkeys, in general, may be obtained from Home and Garden Bulletin No. 45, available from the U.S. Department of Agriculture, Washington 25, D.C.

Canning and Smoking

There is a limited but increasing market for canned poultry. Some poultry producers find that canning provides a profitable method of disposing of older birds and young birds which have defects. A publication of the U.S. Department of Agriculture, HG–6, entitled "Home Canning of Meat," contains detailed directions for canning poultry, with or without bone, by both the "hot pack" and "raw pack" methods. A pressure cooker should be used in canning poultry.

Smoked poultry, particularly turkey, is considered a delicacy. Many of the State colleges of agriculture have issued educational publications on smoking poultry. A U.S. Department of Agriculture Correspondence Aid, APH No. 27, entitled "Curing and Smoking Turkeys," contains detailed directions.

Producer Grading and Inspection

For the purpose of the poultry producer, grading means the classifying of poultry by class, quality, and weight. Inspection refers to an examination of birds for indications of disease or other conditions which may make the birds unfit for human consumption. Actually, such grading and inspection services may be part of the same operation. As a producer examines his birds while grading, he should also look for abnormalities that may be present.

Although producer grading and inspection should be a continuous procedure during dressing and eviscerating, the final grading and inspection of dressed birds to be sold as such should take place after the dressing operation, as the birds are being packaged for shipment or direct sale to the consumer. The inspection of poultry that is to be

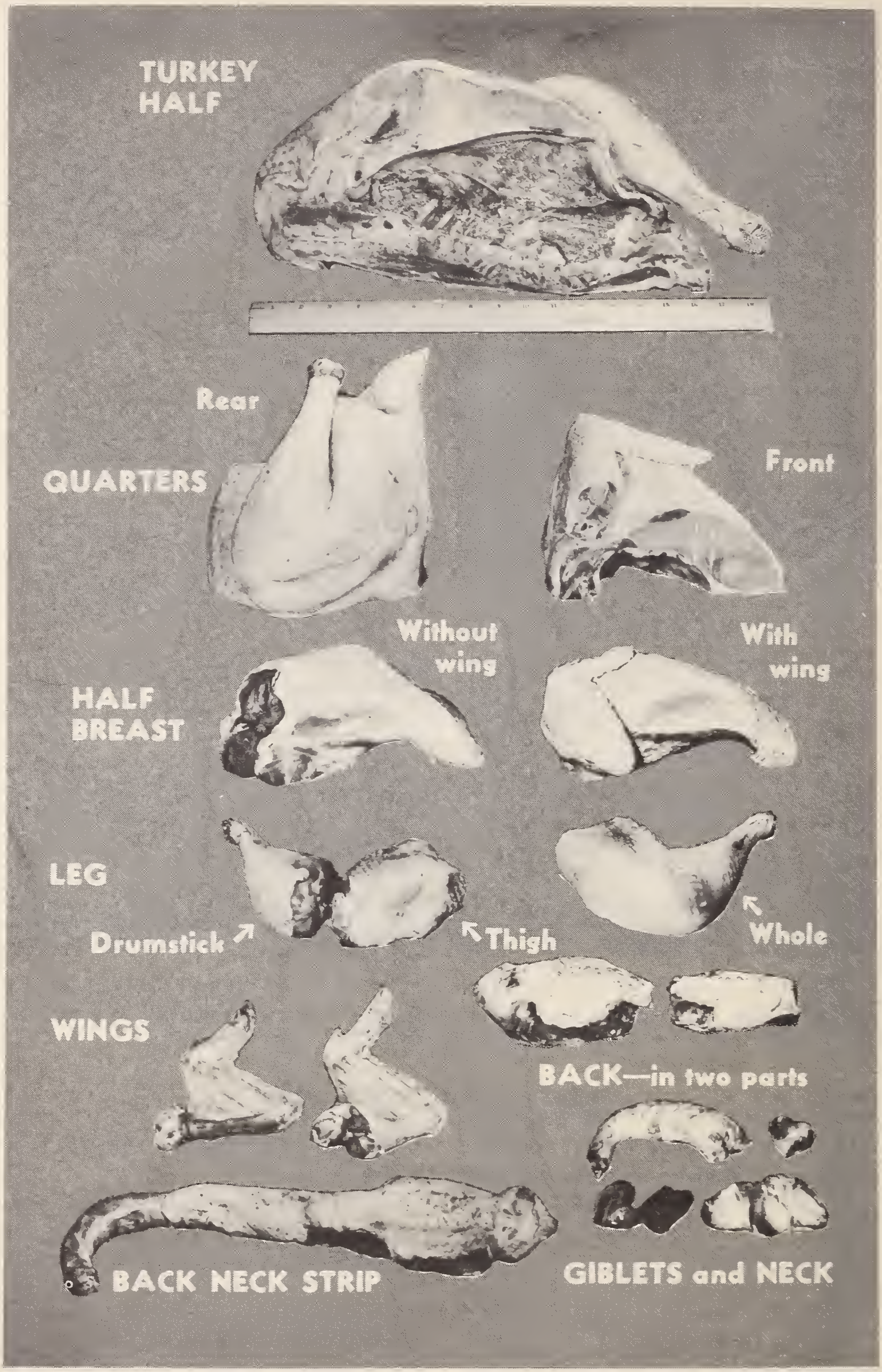

FIGURE 22.—Different cutup turkey parts.

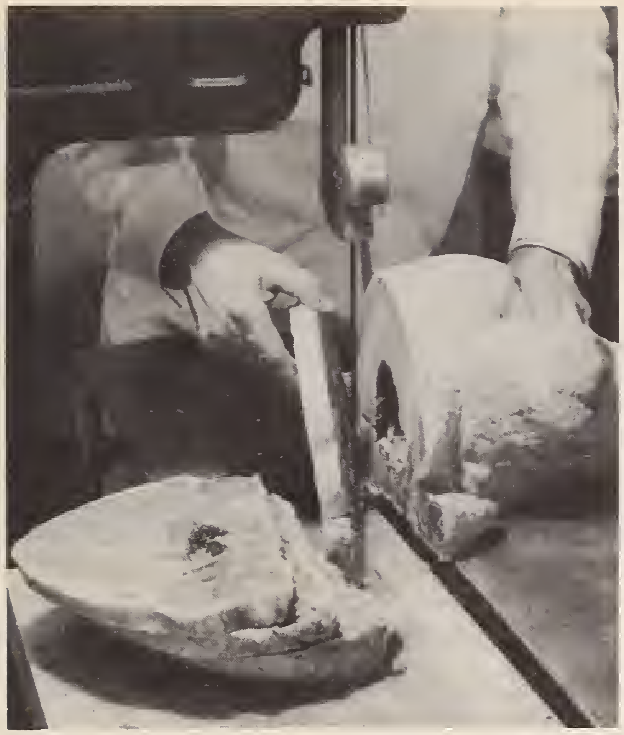

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Figure 23.—A large frozen turkey being sawed into crosscut steaks about three-fourths of an inch thick.

eviscerated should take place at the time the abdominal cavity of each bird is opened and the visceral organs removed. The final grading of ready-to-cook poultry (eviscerated) should be undertaken after the eviscerating operation as the whole birds are being packaged or before cutting up or disjointing the whole birds.

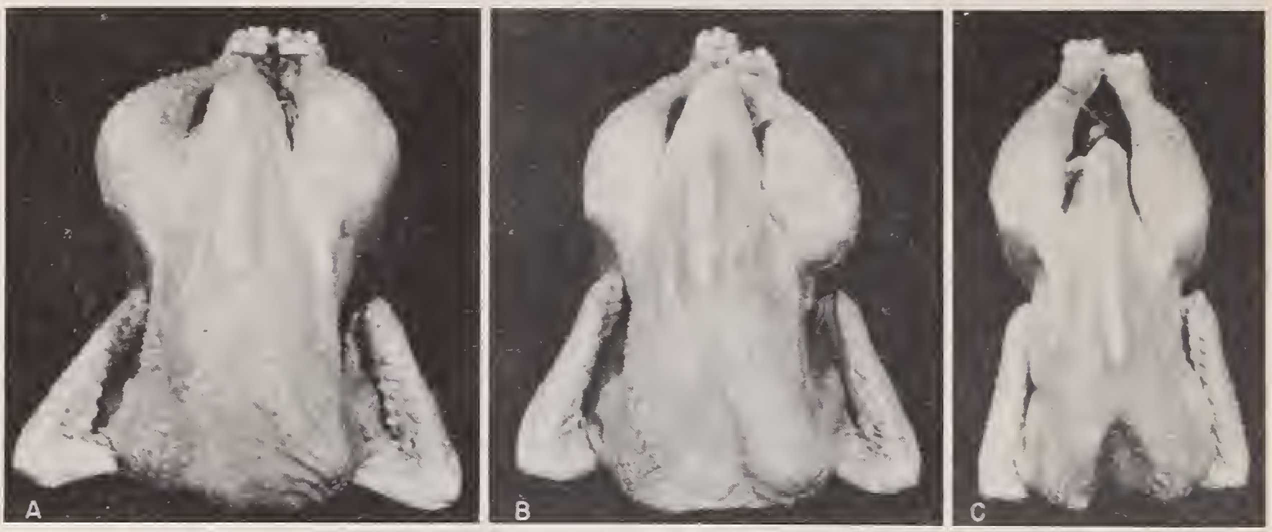
Producers will find that proper labeling as to quality and class will build confidence on the part of buyers. The three standards of quality that have been established for ready-to-cook poultry, A Quality, B Quality, and C Quality, are based on the following factors: conformation, fleshing, fat covering, and degree of freedom from bruises, skin tears, and pinfeathers.

Grade A poultry is full-fleshed and "meaty" and has a good layer of fat. The skin is smooth and practically without tears, discolorations, or pinfeathers. There are no crooked or broken bones. The bird is clean and attractive.

Grade B poultry may be slightly lacking in meatiness and fat, or may have a few pinfeathers or discolorations of the skin. Or perhaps there is a broken bone or the bird is slightly misshapen. Any one or more of these flaws may cause a bird to be graded as Grade B instead of Grade A.

Grade C poultry may be poorly fleshed on breast and legs, and have a prominent breastbone. It may have no fat. Leg, wing, and breastbone may be misshapen or bones may be broken. There may be a scattering of pinfeathers and any number of cuts, tears, or discolorations of the skin.

These summaries may be used as a basis for grading, whether a producer or processor wants to use the same grade designations (A, B, or C) or whether he wants to establish his own designations.



N20806, N20803, N20807

FIGURE 24.—Young chicken carcasses; (left to right) A Quality, B Quality, and C Quality.

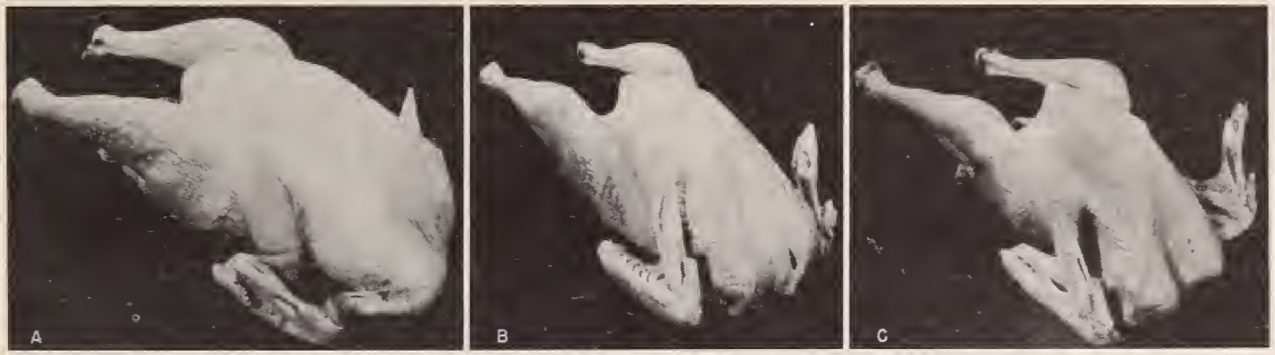
Standards of quality for poultry may be obtained by writing to the Poultry Division, U.S. Department of Agriculture, Washington 25, D.C. The birds shown in figures 24 and 25 may be used for making visual comparisons in grading.

Experience has shown that, with good management, it is possible to produce upwards of 90 percent top-quality birds. Good management includes selecting strains that develop full feathering, fleshing, and fat cover at a size the market demands. If, for instance, there is a good demand for broiler-fryer turkeys, it is best to use the smaller strains of turkeys for this purpose.

As grading and inspection work progresses, birds showing the following external characteristics should be removed and neither sold for human consumption nor fed to animals: extreme emaciation, obvious evidence of disease, abdominal accumulations, and evidence of anemia or bruises in excess of that permitted in C-quality birds. Birds that are emaciated are very thin or "wasted away." The skin and flesh of birds showing evidence of disease are darker than normal, the combs and wattles (dressed birds) may be shrunken or engorged with blood and have a bright-red or purplish color, the skin may appear thinner, and both the skin and flesh may appear doughy. Abdominal accumulations refer to body cavities that are filled with fluid or cheeselike substances. When these accumulations are present, they can sometimes be determined by feeling the abdomen. The abdomen will likely be enlarged and if fluid is present inside it will move around under pressure from the fingers. Anemic birds are identified by abnormally pale carcasses.

Many diseases of poultry are chronic and develop slowly. A great number of abnormal conditions appear on the internal organs of birds, especially older birds. The lesions found in the abdominal organs, caused by tuberculosis, blackhead, ruptured ova, Newcastle disease, pullorum disease, visceral lymphomatosis, and many other conditions, will be found in birds which appear to be normal. For this reason, the internal surfaces of the abdominal cavities as well as the visceral organs of birds being eviscerated should be examined.

Internal evidence of diseases may appear as bloody spots on or under the surfaces of such organs as the liver, spleen, heart, lungs, kidneys, ovary, and intestines. They may appear as yellowish deposits within the heart sac or air sacs, or even



N15631, N15633, BN2208

FIGURE 25.—Young tom turkey carcasses; (left to right) A Quality, B Quality, and C Quality.

within the substance of the organs. The organs may be smaller or shrunken, pale, dark or discolored, with greenish, brownish, or bluish shades of color. White or gray spots, cream-colored growths, and numerous unusually shaped, shrunken, or swollen areas may be evident. The organs may be firmer, softer, or more mushy than normal, and they may contain firm, hard nodules (lumps, knots); or they may contain small sacs filled with fluid.

If the abnormalities just discussed appear to affect not only the organs but the carcass itself, the bird and organs so affected should be discarded, unless an expert on poultry diseases has made an examination and determined that the abnormalities would not endanger the health of humans or animals.

Under certain conditions, processed poultry held for even short periods of time may show evidences of decomposition. Birds should be destroyed if they show any of the following characteristics, since they are not fit for consumption and may be classed as adulterated food under the Federal Food, Drug, and Cosmetic Act: A slippery or slimy condition of the skin, especially between the wing and the body and neck; a greenish cast over the back and between the thigh and the ribs (this color should not be confused with the green or blue-green color resulting from sunburn or pigmentation that may show through the skin); mold growths anywhere on the bird, especially between the legs or on the head and around the vent; a putrid off-odor; or a green vent or green area surrounding the vent.

For further information on poultry diseases, contact the nearest State college of veterinary medicine or the local veterinarian.

Packaging Processed Poultry

No matter how good the quality of poultry or how well it has been eviscerated and graded, much of the sales value is lost if it is not well packaged. An attractive package helps to make sales.

All containers and packaging materials used for processed poultry should be new and of sufficient strength to carry the birds in good condition. The containers should be made of odorless materials that will not contaminate the product.

At the time of packaging, ready-to-cook poultry should be clean and well drained of free water and ice so as to avoid drainage of unsightly bloody water into the ice or packing materials after packaging.

Packing Chilled Poultry for Shipment

When dressed or ready-to-cook poultry is to be shipped to market in a chilled (not frozen) condition, it can be ice packed in boxes, barrels, or drums with paper liners. In addition to the refrigeration provided, this keeps the birds fresh and clean.

Although boxes for shipping chilled, processed poultry are available in many sizes, the wirebound box shown in figure 26 is the one most commonly used. The inside dimensions of this box are 22 inches in length, 16 inches in width, and 10 inches in depth.

When the birds are packed in these boxes without being individually wrapped, two paper liners are used in each box. Die-cut liners in one piece are available also. The liners should be of a kind of paper that does not tear readily during use, but remains intact when moistened by the product. Papers fulfilling these requirements are plain kraft wet-strength paper and untreated parchment paper. Neither of these papers will tear easily when wet, and they are not impervious to the passage of water vapor. An adequate number of drain holes should be provided to permit the water to drain out.

Young chickens are generally packed to a net weight of 60 or 65 pounds in the wirebound box. A net weight of 70 pounds is about the maximum which can be packed to allow for the 15 to 20 pounds of ice necessary to carry the product.

Packing Frozen Poultry for Shipment

Whole, ready-to-cook poultry is now generally individually packaged in bags made of a plastic film that is relatively transparent and tough and reasonably impermeable to moisture and air. Marketing of frozen whole, ready-to-cook poultry is confined principally to turkeys, capons, ducks, and geese. Frozen chicken appears mostly in cutup form.

Individual "bagged" turkeys may be packed in fiber boxes for shipment to market. Four of these individual boxes are sometimes packed in a sleevelike corrugated overwrap.

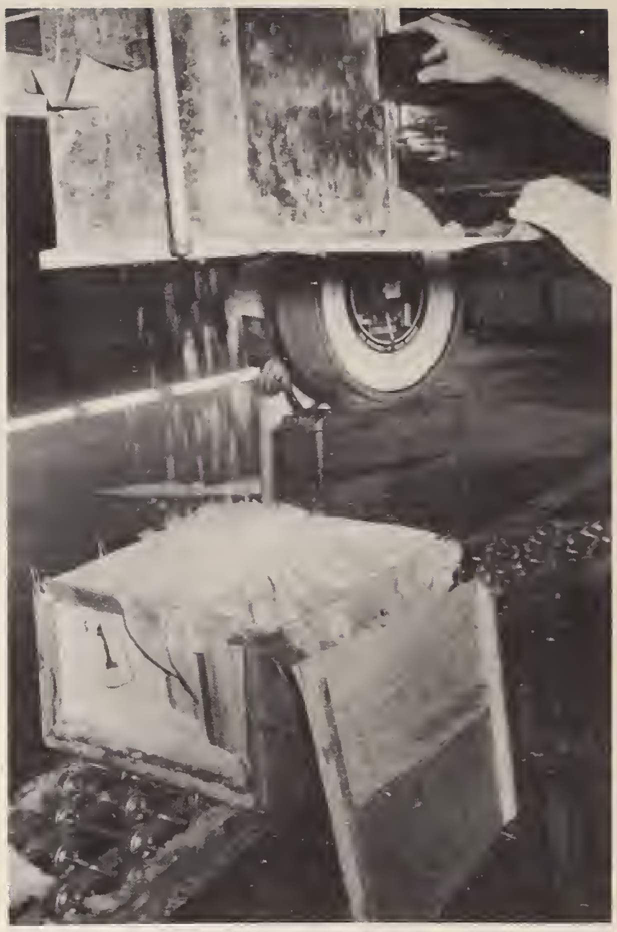

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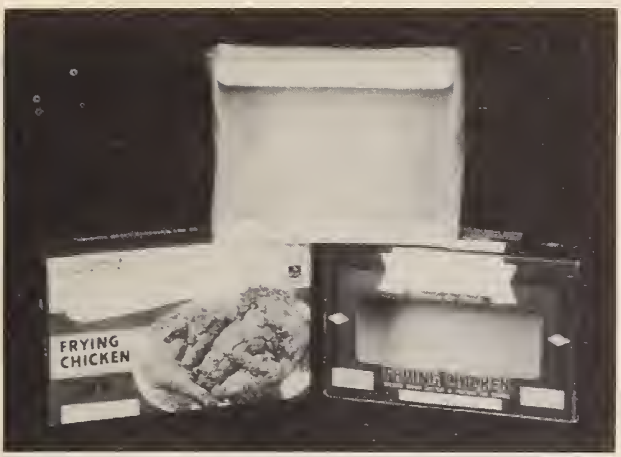
FIGURE 26.—A wirebound box with paper liners. Crushed ice is added to cover the ready-to-cook poultry.

Die-cut fiber boxes of various sizes are used for packing two, four, or six individually wrapped turkeys, capons, ducks, or geese. These poultry boxes, designed to hold four to six birds, are also available with individual cells. Frozen birds are also packed in wirebound and wooden boxes for shipment.

Cutup poultry can be packed in paperboard cartons, such as those illustrated in figure 27, frozen, and then packed in a shipping container for shipment. Poultry parts such as legs, breasts, wings, backs, gizzards, livers, and necks, or any combinations of these parts, or halves of birds, may be packaged in these cartons.

Packaging for Retail Sales

For use in a display case in the farm salesroom or in large roadside



BN–1361

FIGURE 27.—Paperboard cartons in which cutup poultry is frozen. From left to right, a carton overwrapped with paper, an open-faced carton overwrapped with a film, and a windowed carton.

stands, chilled whole ready-to-cook or dressed birds can be wrapped in a transparent or plastic film. In this type of packaging, a bird may be placed on a paperboard tray and the film wrapped around the tray and bird (fig. 28); or the bird can be wrapped and then placed on a backing board (a flat piece of paperboard).

After the birds are wrapped, two or three holes should be made in the film to allow for the escape of gases that may accumulate.

Chilled, cutup ready-to-cook poultry parts are usually packaged in paperboard trays and overwrapped with a film for display in the same manner as that described for whole birds.

For retail routes, ready-to-cook poultry can be delivered wrapped in the manner just described, or whole birds may be wrapped in vegetable parchment or butcher paper and delivered, provided that some method is devised for keeping the birds at a temperature of about 40° F. while en route.

Whole ready-to-cook birds can also be placed in bags made of plastic or transparent film, frozen, and displayed; or they may be delivered on retail routes after being handled in this manner. Since packages containing frozen poultry should be as airtight as possible, some method of removing the air from the package after the bird is placed in the bag should be devised. Figure 29 shows the steps in one method of packaging whole birds in bags for freezing.

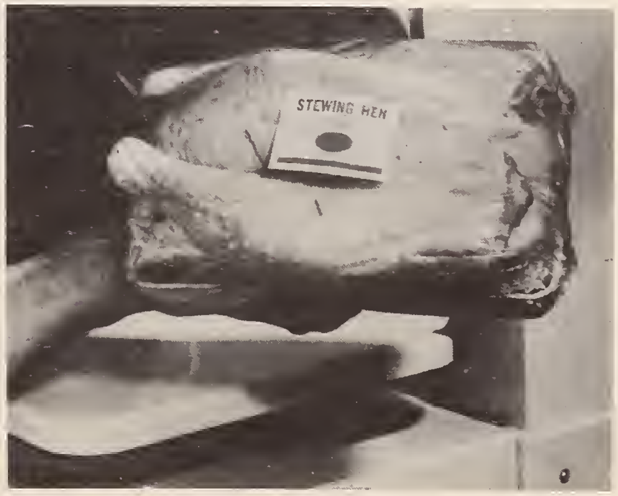
Another method of packaging birds in a plastic film bag for freezing includes the use of mechanical equipment for exhausting the air from the bag.

Frozen cutup ready-to-cook parts packed in cartons can also be displayed or delivered on retail routes.

Freezing and Storing Processed Poultry

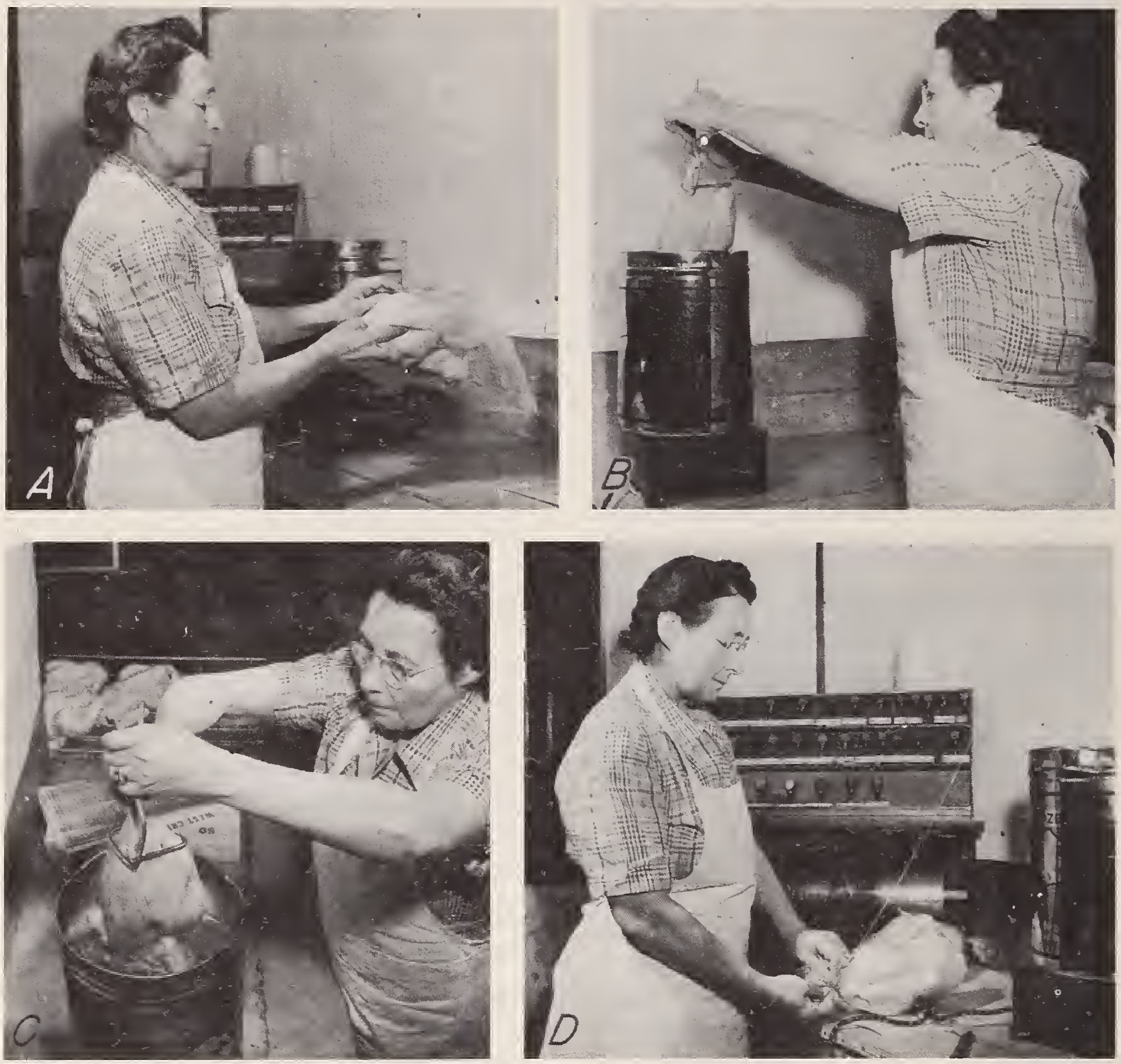
Particularly in large farm processing plants, adequate freezing and storing facilities are often valuable for freezing poultry when prices are seasonally low, so that it may be sold when prices have risen. Also, poultrymen find that young birds should be slaughtered at certain weights in order to make the most economical gains, or to be sure to have available the size in greatest demand.

Ready-to-cook birds should be chilled before freezing. If they have been eviscerated cold, no fur-



DN–1640

FIGURE 28.—A tray-wrapped stewing chicken.



DN—1619

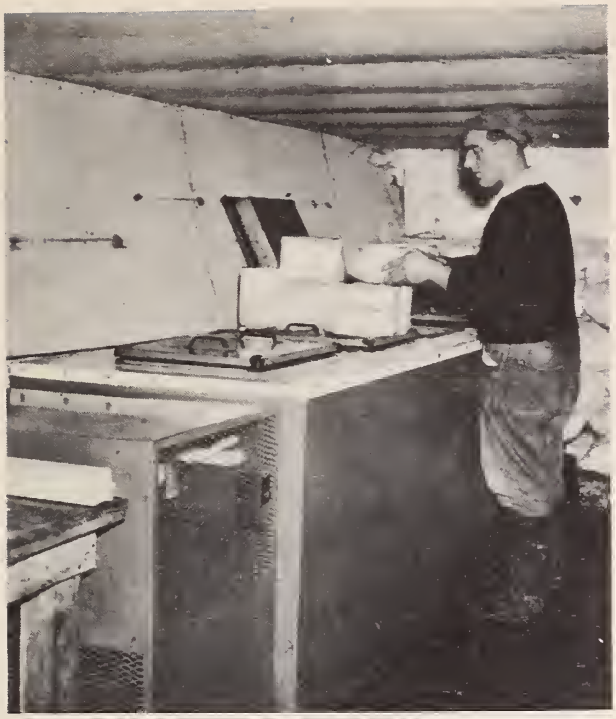
FIGURE 29.—Packaging a bird in a plastic bag, prior to freezing; *a*, Inserting the bird; *b*, placing the loop of a steel bar around the mouth of the bag preparatory to submerging in boiling water. After it is submerged and the air forced out, the mouth of the bag is closed by twisting; *c*, removing bird from boiling water; *d*, tying twisted closure.

ther chilling is necessary as long as they are frozen immediately after eviscerating or cutting up. If they have been eviscerated while warm, they should be chilled before freezing.

After the necessary preparation, birds may be frozen in a small freezer cabinet (fig. 30) or in a farm "walk-in" freezer, or they may be sent to a locker plant for freezing.

Birds should be frozen immediately after wrapping or packaging at −10° F. with circulated air, or −20° F. with still air. Temperatures of from −20° to −40° F. are desirable. As a guide to freezing time, ready-to-cook poultry should be frozen solid within 72 hours. Freezing rooms should be equipped with floor racks or pallets, and fans to insure air circulation.

Frozen poultry should be stored at 0° F. to −10° F. with the temperature maintained as constant as possible. In many cases, the home-freezer in rural homes can be used to advantage in conjunction with a locker plant. For those who live at a distance from a locker plant, some form of home storage would be val-



DN–1641

FIGURE 30.—Placing film-wrapped and carton-packed chickens in a freezer.

uable. In order to prevent spoilage when poultry is prepared at the farm for freezing and storing at the locker plant, some means should be provided to keep it cold during the time that elapses between its preparation and final freezing.

When poultry is first frozen, it appears slightly darker than normal, especially those parts of the birds that are not well covered with fat. Fat areas stand out in sharp contrast to the rest of the carcass. After the carcasses have been frozen for about 3 weeks, their color becomes brighter and more uniform. They do not assume their original fresh appearance, however, until completely defrosted. If the freezing process is slow, this darkened appearance is intensified and may last throughout the storage period.

When frozen poultry is held for a period of time under severely fluctuating temperatures, evaporation of the moisture from the skin of the carcass may be so great that light-colored pockmarks appear on the skin. Such a condition is called freezer burn and it is the outstanding visual defect of refrigerated poultry. Although freezer burn may not affect the flavor of the meat, it reduces the sales value of the processed poultry by several cents per pound. Freezer burn generally appears first around the feather follicles, or where the skin of a bird comes in contact with the box liner or the box, so that the moisture is absorbed directly from the flesh into the paper or box material. Freezer burn can be lessened by packaging the birds properly and by maintaining proper storage conditions.

Many poultrymen will need cold storage facilities. If a producer is selling poultry at the farm or in public markets, he will need holding space, since he cannot foretell demand. A poultryman shipping to market may have an order canceled or held up and this, too, creates a need for cold storage.

Chilled dressed or ready-to-cook poultry may be held satisfactorily at temperatures between 32° F. and 36° F. for periods up to 72 hours. Lower temperatures will cause the poultry to darken, which is not desirable if the poultry is to be sold unfrozen. If the poultry will not be sold within 72 hours, it should be chilled after evisceration, held in a chilled state for approximately 12 hours to permit tenderization, and then immediately frozen. For poultrymen having a “walk-in” cooler, the maintenance of temperatures between 32° and 36° F. should be no problem. Refrigerated rooms should have moderate air movement.

On farms not having “walk-in” coolers, a cool room is satisfactory for holding birds ice packed in boxes or barrels, provided that the ice is renewed as often as necessary to keep the birds thoroughly chilled during the holding period.

Poultry packed in crushed ice in well-insulated display cases such as that illustrated in figure 31 may be held satisfactorily up to 72 hours. Care should be exercised to see that poultry unsold after that time is promptly frozen.

Transporting Poultry

Some poultrymen have their own trucks and deliver their birds to the local market, whether it is a store, a processing plant, or a point from which shipments are made. They may deliver on retail routes by truck or automobile.

Live birds should be transported in the cool part of the day, if possible. The coops should be loaded and securely fastened on trucks so that plenty of air circulates through the inside stacks. The birds should be protected in extremely hot or cold weather. The top layer of coops in an open truck should be covered with a canvas or tarpaulin. In bad weather, side drops may be needed. No more stops than are absolutely necessary should be made while traveling.

If live poultry is to be shipped by express, the requirements of the express companies must be met.

For the delivery of dressed or ready-to-cook poultry to customers, some means of carrying the birds at a temperature of 40° F., or less should be provided. A large box, with the center part walled off, can be used. The center part should be filled with ice and the wrapped birds (either wrapped individually or wrapped together in a liner) should be placed in the box between the center partition and the outside wall. For quick delivery where ice is not available, well-chilled or frozen birds may be wrapped with several layers of paper (newspapers can be used if they don't come into contact with the birds) and placed in a box and covered. One or two manufacturers are making insulated boxes in which ice or dry ice can be used to maintain low temperatures.

For delivery of ice-packed poultry in trucks to a railroad shipping

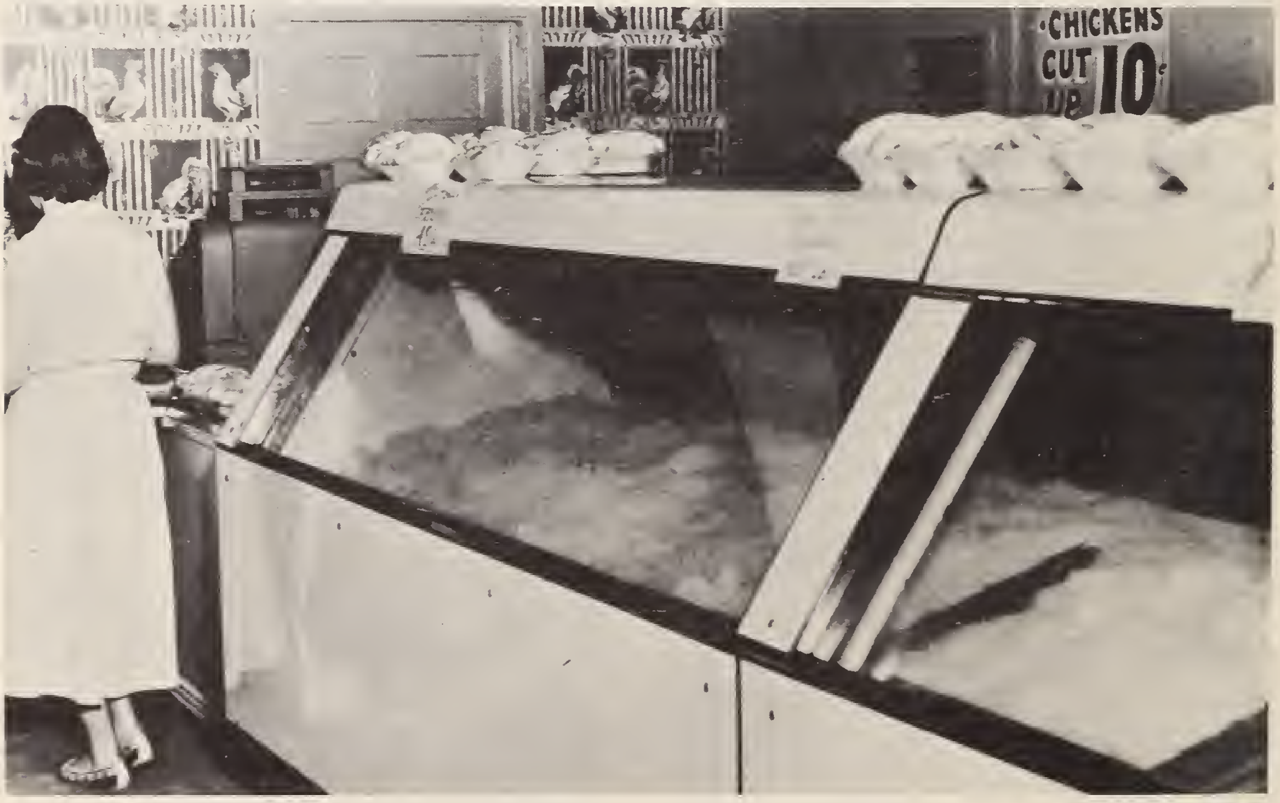


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FIGURE 31.—View of a portion of a salesroom. Ready-to-cook birds are kept in crushed ice in showcase. Cutup chicken, properly packaged to make it desirable to customer, is shown on top of case ready to go into freezer.

point, the boxes or barrels should be fastened tightly on the truck. Open trucks should be covered by a tarpaulin against the summer sun.

The U.S. Post Office Department has regulations pertaining to the shipment of poultry by parcel post. Consult local post office officials.

A newly developed pack is now used to ship a frozen ready-to-cook bird by parcel post. Dry ice, used to preserve the bird, is placed in bags and put into the box with the bird. One manufacturer has made a box which contains a special compartment for dry ice.

Points To Remember in Marketing Farm Poultry

In Planning a Marketing Program a Prospective Poultry Producer Should—

1. Try to choose a farm near a good market. It is generally desirable to locate near a fairly large city.

2. Since poultry production requires a high investment per bird, make careful inquiries as to the different types and sources of loans available for financing the production phases and marketing operations.

3. Before building any production or marketing facilities, make a decision as to whether birds will be sold alive only, or whether investment in processing facilities would be wise. To do this—

a. Compare usual prices paid for live and processed poultry.

b. Determine the number of buyers of poultry to ascertain whether there will be competition among them.

c. Determine the kinds and classes of poultry wanted by buyers of both live and processed poultry.

d. If processing is to be done, try to locate on a farm on a busy highway.

e. Be sure labor is available.

f. Remember that processing facilities and labor are expensive, and be sure to take into account the additional investment necessary to maintain this kind of marketing.

4. After deciding to process poultry, consider the following factors:

a. The plant layout and arrangement of equipment and facilities, since these factors can greatly affect efficiency.

b. The adequacy of facilities and equipment for the probable number of birds to be processed.

c. The kind of equipment best suited to the class of poultry to be produced.

d. The use of a picking machine, if the annual volume is more than 2,000 birds.

5. Become acquainted with existing Federal, State, county, and municipal regulations which pertain to transporting, processing, and selling poultry.

6. Discuss all plans in detail with the county agent and poultry marketing specialists in the State college of agriculture. Avail yourself of the benefit of their experience. Remember that the marketing program is only one part of an overall plan for becoming established in the poultry business.

In Preparing Live Poultry for Processing on the Farm the Producer Should—

1. Finish birds by feeding a special fattening ration if they have not been raised on high protein, well-balanced feeds.

2. Withhold feed from birds for at least 12 hours prior to killing. Provide plenty of water during this period.

3. Process only those birds that show no evidences of disease or

other conditions which may make them unfit for human consumption.

In Processing Poultry the Producer Should—

1. Make every effort to produce a high-quality product and use efficient and sanitary processing equipment.
2. Thoroughly bleed and cleanly pick the birds.
3. Dress, eviscerate, or cut up birds according to market demands.
4. Chill the birds thoroughly, in clean water and ice or in a sanitary cooler, immediately after pinning, singeing, and washing.

In Preparing Processed Poultry for Market the Producer Should—

1. Grade birds for class, size, condition, and quality.
2. Use new, attractive, sufficiently strong wraps and containers made from materials that are odorless and that will not contaminate or lead to contamination of the poultry.
3. Pack birds of the same approximate weight group together.
4. If birds are to be frozen, freeze them immediately after wrapping or packaging. Freeze them at or below −10° F. with circulated air, or at −20° F. with still air. Ready-to-cook birds should be frozen solid in less than 72 hours.
5. Store frozen poultry at 0° to −10° F.
6. If poultry is to be shipped, mark the packages plainly with the name and address of the receiver and shipper, the kind of poultry, and the gross, tare, and net weights.

In Selling Poultry the Producer Should—

1. Cultivate nearby outlets when possible. Nearby selling often results in greater net returns.
2. Consider prevailing prices for live poultry in nearby markets before selling.
3. In retailing processed poultry, take shrinkage and processing costs as well as other necessary costs into consideration in establishing a sales price.
4. Sell top-quality birds separate from those of lower grade.
5. Advertise his products.

In Transporting Poultry the Producer Should—

1. Fasten boxes or barrels securely to the truck when delivering ice-packed poultry in trucks to a railroad shipping point or nearby market. Open trucks should be covered by a tarpaulin against the summer sun.
2. Provide some means for holding procesed poultry at a temperature of 40° F., or less, while making local deliveries.

Available Market Information

The U.S. Department of Agriculture collects and publishes a great deal of current information, most of which can be obtained without cost.[5] Such information can assist poultry producers in determining when to sell their products. Reports that may be of interest are as follows:

Broiler chick reports.—These reports, issued weekly, indicate the number of eggs set, chicks hatched, and chicks placed on farms for broiler production purposes in each of the major production areas. Production in these areas represents about 85 percent of the total commercial broiler production in the United States. By analyzing these data, a commercial broiler producer can estimate rather accurately the number of broilers that will be ready for market 8–10 weeks in advance. By comparing these data with similar data for earlier months, he can obtain some indication of the probable direction of prices in the weeks ahead. Each month a report is issued indicating the number of chick placements for broiler hatchery supply flocks. These reports indicate the probable trend in the number of broiler chicks which will be available in about 8 months.

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[5] Write to the Marketing Information Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

Daily market reports.—These reports give daily market quotations of prices received by producers in the major production areas. They indicate the condition of the markets (that is, whether weak, steady, or firm), the demand for various classes of poultry, supply conditions, and other information relative to the general market situation. They also give wholesale prices for different classes of live and processed chickens at the major poultry markets. During the turkey marketing season, the reports list wholesale turkey prices (live and processed), and a few of them list producer prices and comment on market conditions.

Cold storage reports.—These reports indicate the total quantities of poultry in cold storage on the first every month. Quantities of broilers, fryers, hens, roasters, turkeys, and ducks are listed separately. The size of the month-to-month changes in these figures, as well as the total quantities held, materially influences poultry prices currently and from one year to the next.

Crop production reports.—These reports give a monthly inventory of the number of chickens on farms. Although the effect of these numbers on poultry prices is not clearly evident, they are important, especially from one year to the next. Since much chicken meat is produced as a byproduct of the production of eggs, the number of chickens on farms is indicative of the quantity of meat that can be expected from this source.

Hatchery production reports.—These reports indicate the number of chicks hatched in commercial hatcheries in the United States. Any change in the number of chicks hatched reflects the number of chickens which will later be sold off farms. Also of importance is the rate of monthly hatching. A relatively high rate of hatch early in the spring indicates an early fall production of eggs, which in turn will likely mean an earlier-than-usual movement of old hens off farms.

Intentions reports.—Early each year, farmers are asked by the Agricultural Marketing Service of the Department how many chickens and turkeys they plan to raise during the current year. Although they seldom raise exactly the number stated, the reports do indicate rather accurately whether production will be up or down, and, in general, how much. A report on the intentions to hold breeder hen turkeys on the January 1 following is issued in October of each year. When the intentions are to hold more breeders than a year earlier, it usually follows that the number of breeders on January 1 is actually up from a year earlier. These reports, like the three reports just mentioned, indicate, in general, the size of poultry meat supplies for the coming months. Since total supplies influence prices, these reports should be carefully considered by poultrymen.

Poultry and egg situation reports.—These reports, which are published monthly by the Agricultural Marketing Service, summarize the information on production, stocks, prices, and demand. They should be considered in evaluating the current and prospective poultry situation.

Demand and price situation reports.—These reports deal primarily with such information as production of durable and nondurable goods, wholesale food price levels, employment, and the level of personal income. Although such information may not appear to be of direct interest to poultry producers, it actually is of great importance in determining the prices they receive. The relation between how much people have to spend and how much they spend on poultry meat is rather consistent. What people have to spend is, in turn, closely related to the number employed and the level of wages.

Turkeys tested reports.—These monthly reports indicate the number of heavy and light breed turkeys tested for pullorum control. Such data give an advance indication of the size of the turkey crop, as well as the periods of light or heavy production of eggs and poults.

The Defense Role of the Poultry Processor

The Federal, State, and local governments recognize our food resources and the producers, processors, and distributors of food as vital to our economy. Should this nation ever be attacked, our food resources will become even more important. They will be the key to our survival.

Poultry producers, processors, and marketers are especially important to our capability to provide food in a postattack environment.

Why? Because, generally speaking, they are located at places not normally considered as key targets since the industry is widely dispersed and thus presents less of a concentrated target.

Poultry provides a high protein food and one which can be produced with astounding rapidity. It is, therefore a good potential postattack resource.

The poultry processor, nevertheless, should not consider himself, his sources of supply, or his facility as safe from damage or shutdown should we ever be attacked.

True, the likelihood of his plant receiving a direct hit from a nuclear weapon is rather remote, but there are several things a processor should always keep in mind.

Modern weapons have destructive forces for many miles beyond their point of contact and a "near-miss" today could mean anything within 20 or more miles.

Even without damage from bomb blast, radioactive fallout following an attack could cause a hazard in the area where a farm or a poultry-processing plant is located. No one could risk going outside of shelters or closed buildings for days or weeks or, if the radioactivity were of especially high intensity, for months.

The poultry producer and processor therefore should plan action to effect if necessary—

the survival of employees and their families

the survival of the business—not only the physical plant, but the business records, ownership papers, etc.

the survival of live poultry and preservation of processed birds.

In most cases, local civil defense organizations can give guidance in these matters. Where such advice is not obtainable at local levels, the Poultry Division, Agricultural Marketing Service, USDA, Washington 25, D.C., will be glad to furnish information or tell the processor where it may be obtained.

Selected References

Single copies of these publications may be obtained upon request from the Division of Publications, Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Leaflet No. 233—Selecting Breeding Stock for Broiler Production
Agriculture Handbook No. 151—Broiler Feeding
APH-27—Curing and Smoking Turkeys
AIB-173—Poultry Grading and Inspection
FCS—Circular No. 23—Cooperative Marketing of Turkeys
Home and Garden Bulletin No. 15—Freezing Meat and Poultry Products for Home Use
Home and Garden Bulletin No. 45—Turkey on the Table the Year Round

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